Drug & Cosmetic INDUSTRY

FEBRUARY, 1950

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ELMER SHEETS, Managing Editor
FRANCIS CHILSON, Production Consultant
MILTON A. LESSER, Technical Editor
HARRY G. KELBLY, Raw Material Editor
FRANK CHILD III, News Editor
HILDA C. McCOLLOM, Art Director

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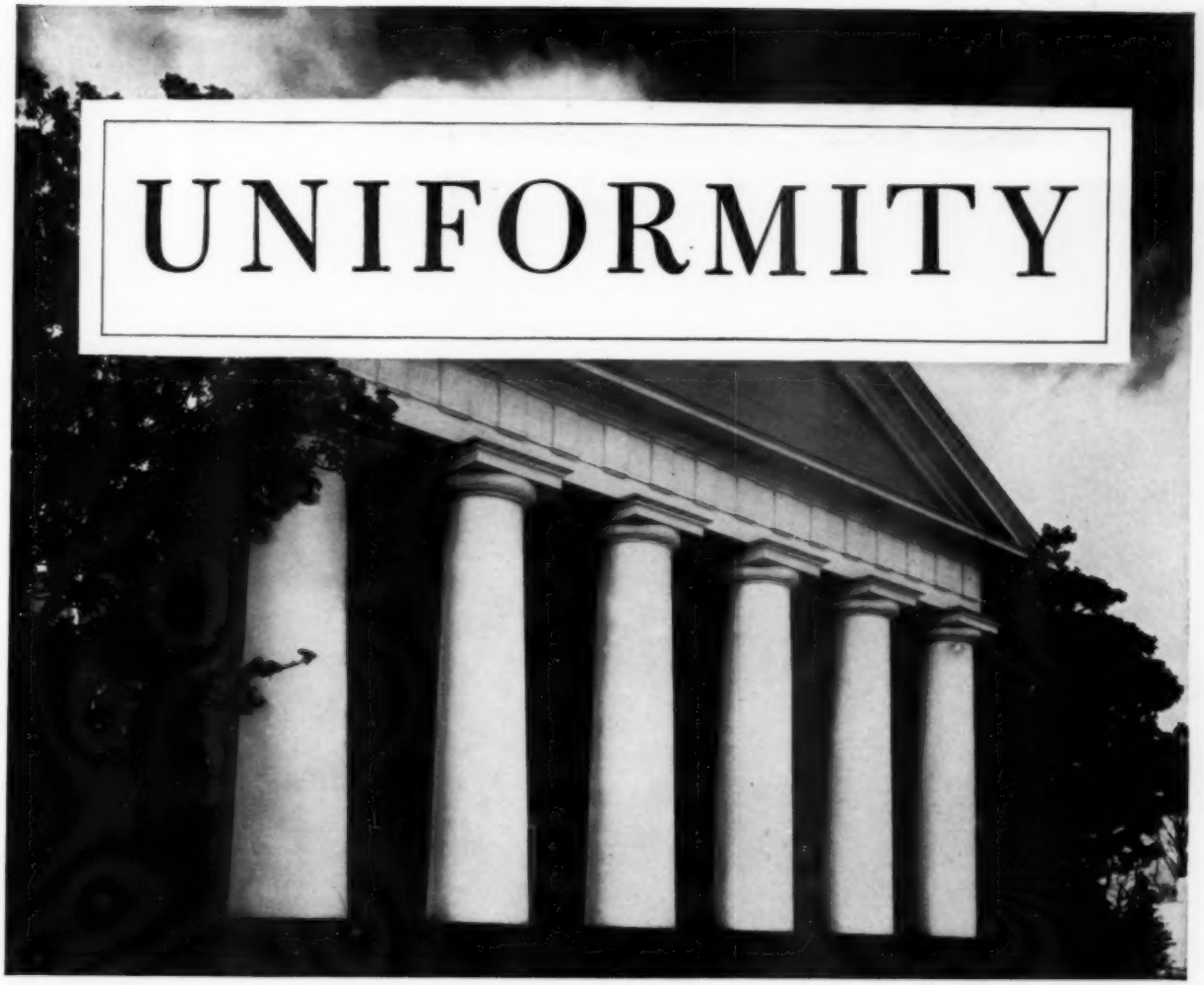

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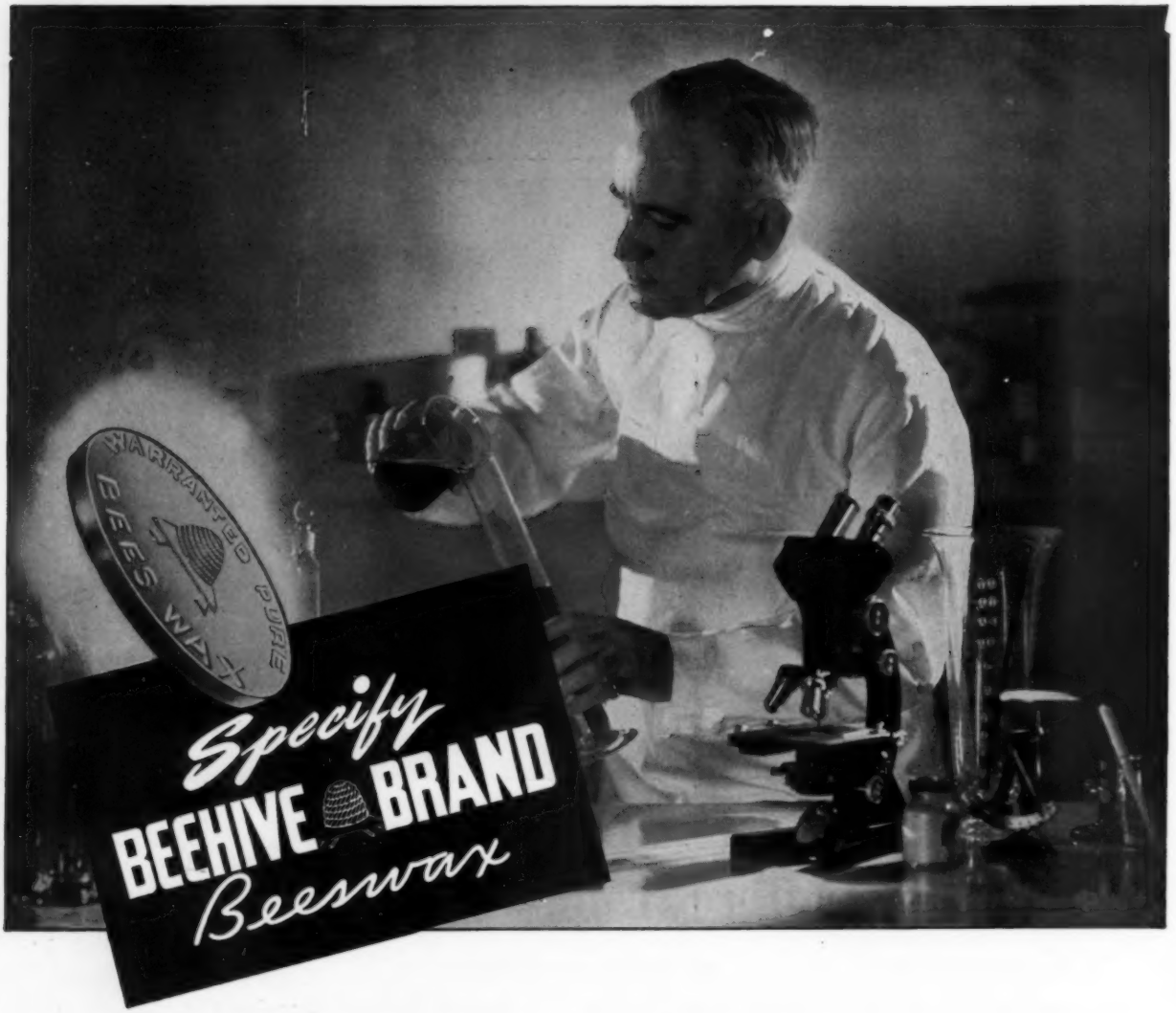

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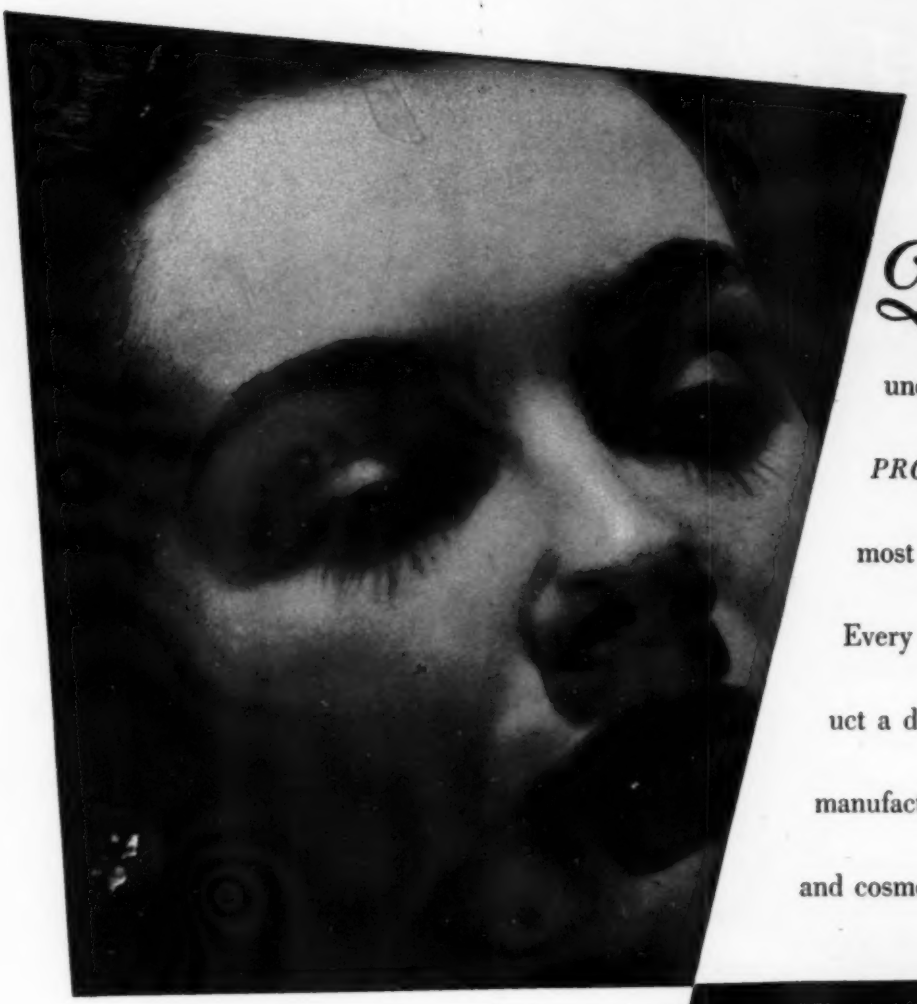

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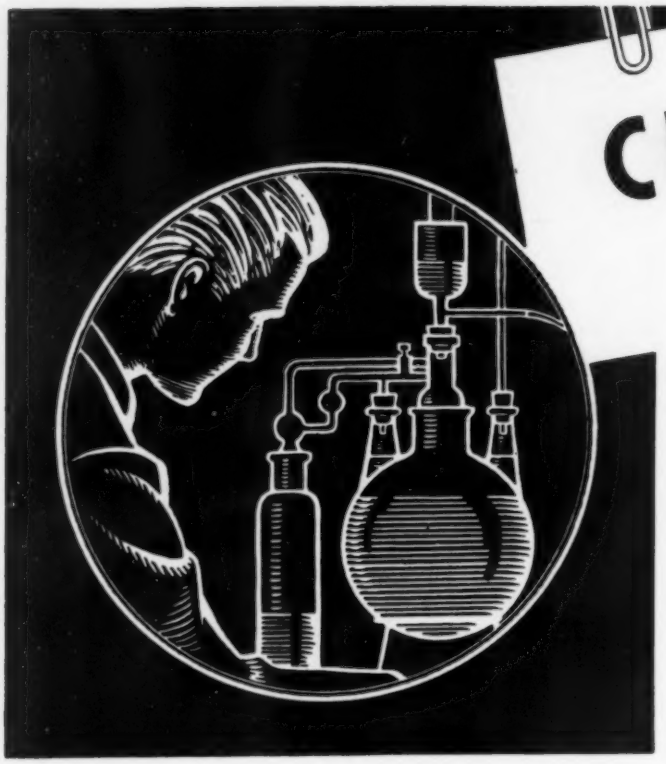

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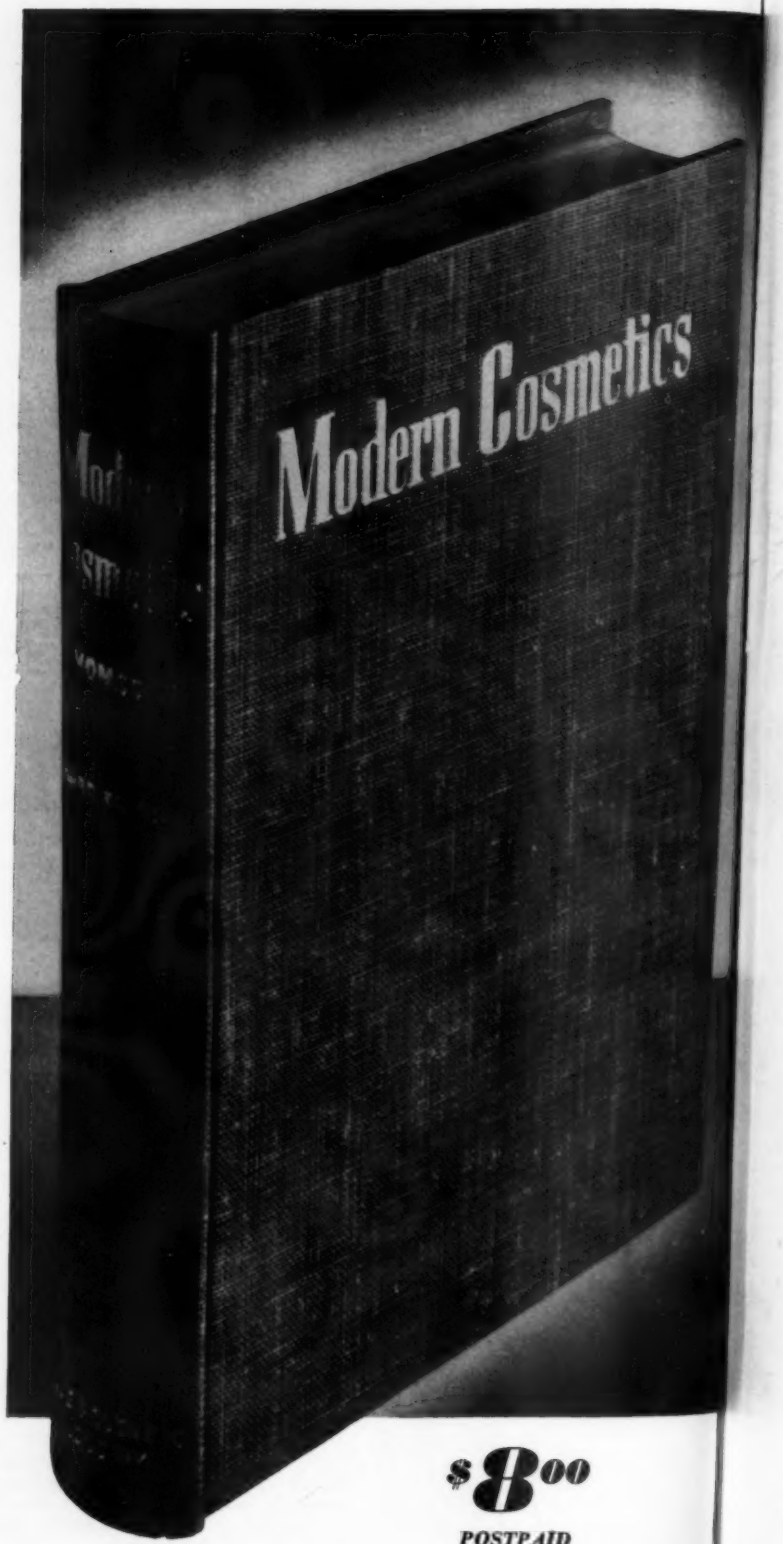

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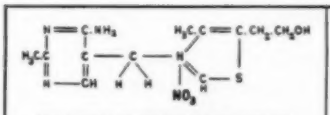

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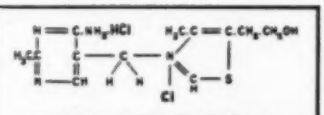

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	Arlacel 60	2.0%
	Tween 60	1.5%
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	Water	78.0%
	Preservative	q.s.
C	Perfume	q.s.

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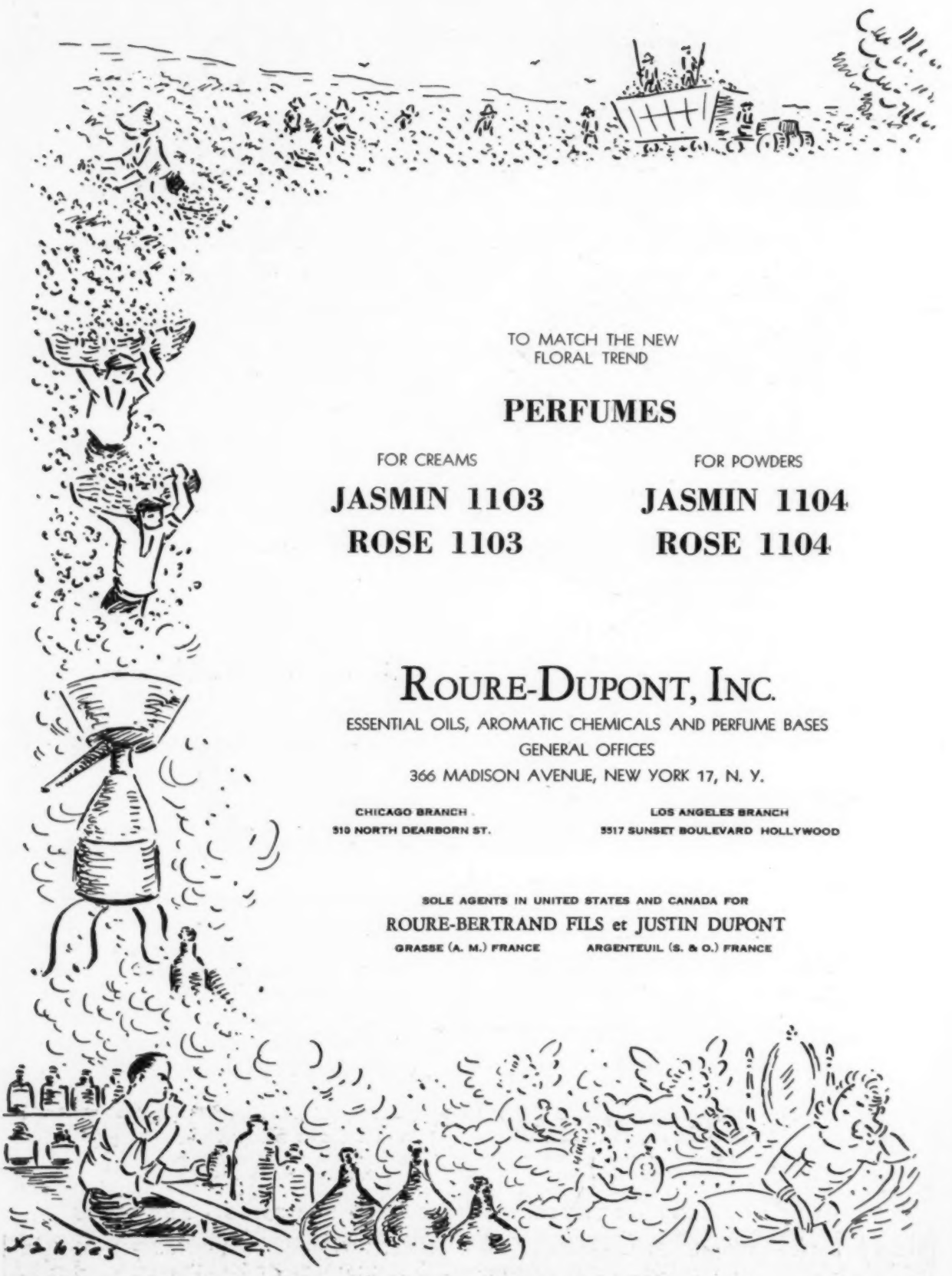

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New Vitamin P Drug

A VITAMIN P type drug, hesperidin methyl chalcone, which clinical tests have reportedly shown to be effective in the cure and prevention of capillary permeability and fragility, is now commercially available from the Products Department of the California Fruit Growers Exchange. W. E. Baier, research department manager, says that the natural flavonoid material in lemon peel, which is rightly called vitamin P, and for which Dr. Albert Szent-Gyorgyi won the Nobel Prize for his discovery in 1936, is probably a group of related materials. Hesperidin is a white glucoside flavonone present in vitamin P, but it does not give the characteristic yellow color reaction with boric acid in an anhydrous solution. By treatment with alkali, hesperidin is converted to its chalcone which does give the characteristic yellow color with boric acid just as does natural vitamin P. This chalcone, however, soon reverts, by closure of the ring, to an insoluble flavonone, but such reversion is prevented by introduction of a methoxyl group, giving a stable new vitamin P type drug.

Foreign Essential Oil Conditions

ESSENTIAL oil markets abroad are being very seriously affected by the needs of the producing countries for important pharmaceuticals, such as penicillin, streptomycin, sulfa drugs, etc., said Hans P. Wesemann, vice-president and secretary of Fritzsche Brothers, in his presidential report to the Essential Oil Association of U. S. A. The desire to obtain these drugs, as well as food essentials, such as fats and grains; machinery, equipment, and raw materials, results in "unbelievably low quotations for some of our essential oils, which in fact are far below production cost and represent a very serious handicap to us who trade only in these products and have nothing else to barter against them," said Mr. Wesemann, who continued:

"This situation cannot be expected to remedy itself until such time when a firm ratio has again been established among all currencies and thereby, people would again have confidence in their own money, something which does not exist today in most soft currency countries . . . A further important factor in price increase of essential oils is the cost of living. It is practically unbelievable for us to realize that, compared to a pre-war index, say of 1939, the cost of living in Singapore is 15 times as high; in Algeria and France it is 20 to 22 times as high; Madagascar and Reunion, 25 times as high; Dutch East Indies, 30 times as high. An additional important factor to be considered is that in Reunion the production of sugar is growing by leaps and bounds. In that industry such high wages are being paid for labor that the essential oil producer simply cannot compete. It is feared that production of essential oils from there, particularly geranium, vetiver, and ylang ylang will be much curtailed, resulting in very high prices for the small production as will continue to exist.

"In many items, production (for 1950) might be barely sufficient for actual requirements and dependent on actual growing conditions and demand, we might again, in some instances, experience such spectacular price rises as we had for instance in oil patchouly, which advanced practically threefold in price during last year. Unsettled political conditions make it impossible to estimate future happenings, especially regarding products of Chinese origin, but here, more or less satisfactory substitutes are available. The exceedingly rigid export controls exercised by several South American countries put dealings with them on a predetermined level and leave no room for individual efficiency."

Sulfa Drug Use Increases

SULFA drug consumption expanded widely during 1949. U. S. Tariff Commission figures for the first nine months of that year give a total output of 4,380,065 pounds, against a production of 1,776,492 pounds during the same period of the year before. While these figures indicate an increase of 140 per cent for the 1949 period over the 1948 period, we have other figures for certain of the sulfa which we are certain are accurate. These are the amounts of royalties received by Sharp & Dohme under their patent licenses on certain sulfa

pyrimidines (sulfadiazine, sulfamerazine, sulfa methazine), and they are: 1946, $667,467; 1947 $544,815; 1948, $533,478; first nine months of 1949, $659,900. Projecting the 1949 figure to cover the entire year, and comparing this figure with that for 1948, we arrive at the conclusion that the increase in the sale of these sulfa drugs for 1949 was 65 per cent over the sales in 1948. The poultry industry consumption of sulfa drugs is an extremely important part of this picture.

New York City Drug Purchases

SOME idea of the care given medically-indigent people—in New York City at least—is indicated by the City's expenditure of $1,785,000 for drug products during 1949. The largest expenditures were for aureomycin, chloromycetin, penicillin, and streptomycin, according to Louis Samuels, director the Division of Pharmacy of the City's Hospitals Department. Mr. Samuels said that in December alone, the City spent $64,000 for these antibiotics. Aureomycin and chloromycetin have proven outstandingly effective in treatment of typhoid, virus infections, in some infections resistant to penicillin and streptomycin, in the rickettsial diseases, lymphogranuloma venereum, granuloma inguinale and brucellosis, he said. During January, 1949, when aureomycin made its appearance, 22 vials were used, each containing 16 capsules, while 2,684 vials were used during the last month of the year. During the month of May, when chloromycetin was introduced in municipal institutions, 74 vials, each containing 12 capsules, were used, while in December, 1,039 vials were used.

Because of the increased use of these two drugs, Mr. Samuels said that the use of penicillin, which appeared in 1944, "has apparently reached its level at this time." In January of last year, 421,050 vials of 100,000 units each were distributed to patients, compared with 486,000 vials in December. Until last year, use of penicillin doubled each year, said Mr. Samuels. The cost of pencillin is about one per cent of the cost in 1944, and current expenditures for it run about $18,000 per month. Streptomycin now costs only 6 per cent of its original price, the monthly expenditure being about $14,000. Last January 22,475 vials of one gram each were used, compared with 30,334 vials used in December.

Para-aminosalicylic acid has been found effective in treatment of tuberculosis, particularly when given together with streptomycin, said Mr. Samuels, who said that the City has spent $11,000 on this drug since it was introduced last Summer.

Therapeutic Research Activities

THE Therapeutic Research Foundation announces through its board chairman, Dr. H. P. Herwick, medical director of Whitehall Pharmacal Company Division of American Home Products Corporation, that there are in the hands of interested manufacturers and distributors three proposed programs for a thorough-going research study, one on boric acid, one on bitter tonics, and one on antihistaminic preparations containing belladonna-stramonium-like alkaloids. It is thought that these companies will, in the near future, provide the necessary funds to get these projects under way. Comprehensive literature surveys have been completed on hydrastis, the anti-bacterial action of boric acid and boron compounds, stramonium-containing cigarettes and powders, and papain. Shortly a review on viburnum will also be completed.

National Vitamin Foundation Grants

THE National Vitamin Foundation announces through its president, Dr. E. Gifford Upjohn, eight new grants totaling $55,505, and bringing to a total of $240,801 the amount appropriated by this non-profit institution for grants-in-aid of research on the significance of vitamins and others nutritional factors to human health and resistance to disease. The eight new grants, which became effective January 1, include:

Dr. Bacon F. Chow, Johns Hopkins University, School of Hygiene and Public Health, $5,000 to study the value of vitamin B_{12} and of the pteroylglutamates (folic acid) on the blood forming organs and the circulating blood in the human, and the determination of the requirements of man for these vitamins for the maintenance of normal blood cell and hemoglobin values, as well as for the prevention of nervous disorders (combined system disease) in patients with pernicious anemia.

Dr. Benjamin M. Kagan, Michael Reese Hospital, Chicago, $7,500 for studies of vitamin A metabolism observed in certain diseases of the kidney and of the liver.

Dr. R. W. Luecke, Michigan State College, Department of Agricultural Chemistry, $3,000 for the study of the effects of low intakes of certain of the B vitamins during pregnancy on the health and liability of the new born, using the pig as the experimental animal.

Dr. Elaine P. Ralli, New York University, College of Medicine, $3,605 for continuation of studies on the relation of certain of the B vitamins, particularly pantothenic acid, to the functions of the adrenal glands and of the pituitary gland.

Dr. Tom D. Spies, Northwestern University, Department of Nutrition and Metabolism, $5,400 for studies of the effects of vitamin B_{12} on the bone marrow and the circulating blood of patients with nutritional macrocytic anemia and sprue.

Dr. Richard W. Vilter, University of Cincinnati, College of Medicine, $5,000 for the study of pyridoxine (vitamin B_6) deficiency in man and its effective treatment.

Dr. Heinrich Waelsch, New York State Psychiatric Institute, $5,000 for continuation of studies on glutamic acid and glutamine metabolism.

Firm Alcohol Outlook

JUST a little over a year ago, the market for alcohol weakened at the high price levels resulting from the abnormally high prices for molasses brought on by the greatly expanded war demand for this chemical solvent. The market crashed to levels far below costs, and did not stabilize until July. The levels at which it then stabilized were based on a sharply lower molasses market, and since that time prices have been firm. Molasses is now in plentiful supply and its market price is close to the prewar normal. Importers and alcohol distillers have been dickering with the Cuban Institute about the 1950 price. The Institute wants 4 cents per gallon, but the distillers think that 3 cents should be high enough in the face of the large supply available. There is said to be 50 million gallons carried over from the 1949 crop, and a supply from this year's crop of 265 million gallons. It is thought that a compromise of close to 3½ cents per gallon will be the end result.

Since it takes 2½ gallons of molasses to make one gallon of alcohol, the available molasses would produce 126 million gallons. When the synthetic material of Carbide & Carbon Chemicals Corporation, Standard

Oil Company of New Jersey, and Shell Petroleum Company are added to this amount of alcohol, it will readily be seen that the amount of molasses available is more than enough. With a 4 cent molasses market, plus 2 cents per gallon for freight from Cuba, and a duty of ¾ cent per gallon, the raw material cost per gallon of alcohol is 16⅞ cents. Adding to this a processing cost of 6½ cents per gallon of alcohol and an average freight of 5 cents per gallon, we arrive at a total cost of 29⅜ cents per gallon of alcohol. So when additional costs for packaging, selling, and shipping are included, there does not appear to be any possibility of any softness developing in the market which now stands at 30 cents upward according to packaging in tank cars or drums, quantity, and formula.

Ten Oldest Drug Houses

THE list of the eight oldest drug houses in this country, published in our December issue, and taken from the December 1949 issue of Reed & Carnrick's Medical Pocket Quaterly contained several errors which were carried over from the original source. In the first place it has been called to our attention that Schieffelin & Company was established in 1781 instead of 1784. Also Sharp & Dohme was established in 1845 instead of 1860. In addition, the list omitted entirely the Carroll Dunham Smith Pharmacal Company, established in 1844, and Buffington's, established in 1865.

So with these corrections and additions, the list, starting with Schieffelin and ending with Eli Lilly, becomes the *ten* oldest drug houses in this country, and it reads as follows:

Schieffelin & Company	1781
The Tilden Company	1824
The Wm. S. Merrell Company	1828
Carroll Dunham Smith Pharmacal Co.	1844
Sharp & Dohme	1845
E. R. Squibb & Sons	1858
Reed & Carnrick	1860
Buffington's	1865
Parke Davis & Company	1866
Eli Lilly & Company	1876

Cosmetic Discrimination Suit

IN A suit brought by Sun Cosmetic Shoppe, Inc., New York, against Elizabeth Arden Sales Corporation, also of New York, for triple damages because of discrimination in violation of the Robinson-Patman Act, the District Court granted a motion of the defendant and dismissed the case because the transactions between the two companies were intrastate. However, this decision has been reversed by the Circuit Court of Appeals and the case must now be tried on its merits.

However, the decision of the Circuit Court because it points out and delimits the damages recoverable by the plaintiff. The case involved the fact that the plaintiff was not furnished demonstrator services and other things, and the court said that the plaintiff will have to prove by testimony its specific losses resulting from such discrimination. The court said that the damages cannot be measured by the amount of salary which would have been paid to a demonstrator, but that the maximum verdict would be measured by the salary of the demonstrator. However, the court said that no such sum could be arbitrarily fixed by the court in absence of proof of specific damages. Therefore, it seems that the plaintiff will have to prove loss of specific sales—a most difficult and intangible thing to prove and requiring a very large number of witnesses. The Circuit Court said in its decision: "The only proper proof is the loss to the plaintiff's business and the salary of a demonstrator is not such a loss."

This will be an extremely interesting case to follow as an example of what can be recovered as triple damages under discriminatory action in violation of the Robinson-Patman Act.

Antihistaminic Outlook

THE manufacturers of the antihistaminics continue to be in short supply so that there is no opportunity for any additional drug tablet manufacturers to enter the market and try and establish a place as a supplier of these products for the abortion of colds. Since the demand will abate sharply come April, and since some idea of the firmness of the market for the long pull should be available at that time, manufacturers will have the long stretch from then until next September to obtain raw materials and manufacture the necessary drugs and tablets for the following Winter. So looking forward to the Winter of 1950-51, supplies should be plentiful even if the market expands. Also the distributive pipe lines will be full at the start of the season, as will be many of the home medicine cabinets.

The King's Doctor Speaks

LORD Horder, physician-in-ordinary to King George VI of England, has warned that the British National Health Service faces collapse. His statement contained the following excerpts:

"My own belief is that the service in the wasteful and extravagant form in which it exists at present is likely to crash on the rock of economics . . . You cannot doctor a sick patient in accordance with the regulations and instructions issued by Whitehall (the Government). Still less can you practice the healing art on patients paraded before you on a conveyor belt . . . A large proportion of the general practitioners (family physicians) are suffering physically and mentally from a combination of two things—financial strain and worry about their inability to provide good doctoring. Medicine is degenerating into mere certification."

We are of the opinion that if the present system continues long enough, most of the British physicians will stop worrying about their inability to provide good doctoring and accept it as a matter of course causing real deterioration in the quality of medical care in that country.

Deny Brewster Claims

IN A recent radio broadcast of the Northwestern Reviewing Stand from Chicago, the original sponsor of the use of antihistaminics for the abortion of colds, Capt. John W. Brewster of the Navy Medical Corps., drew sharp disagreement from other doctors. Dr. Brewster said that it is his conviction that allergies pave the way for colds by destroying protective tissue in the nose and throat. Dr. Noah Fabricant, assistant professor of Oltolarnygology at the University of Illinois, replied that "the notion that allergy is mainly responsible for the common cold is erroneous" and "not supported by laboratory or clinical evidence." Dr. Samuel Fienberg, chief of the allergy department at Northwestern University, stated that many of his patients

contracted colds while under antihistaminic treatment for allergies. Dr. Paul S. Rhoads, professor of medicine at Northwestern, expressed the belief that antihistaminics "have their place in the treatment of allergic people," but he claimed that "many colds have no allergic element at all."

Capt. Brewster noted that many respiratory diseases have the same onset symptoms, which, he claimed, indicate an allergy reaction causing the death of the outermost cells of the nose and throat, concluding that "with the loss of these cells, the natural defense sheath of the body is breached permitting the entry of not only the cold virus, but also other organisms that may be present in the throat and nose." While Capt. Brewster advised treatment "at the first symptom of a cold," Dr. Rhoads opposed treatment without waiting for diagnosis, and said that Doctor Brewster's view constituted "bad advice particularly when measles or influenza are developing." Dr. Fabricant said that antihistaminics have "no affect whatever upon the virus responsible for the common cold."

Six Page Advertisement in J.A.M.A.

THE largest amount of space ever used by a single advertiser in a single issue of the Journal of the American Medical Association appeared in the January 21st issue. The advertisement was of six consecutive pages in two colors, and told the story of Strong Cobb & Co. Ampins, and of two emergency drugs of Winthrop-Stearns, Demerol and Salyrgan-Theophylline, which are available in Ampins. Ampins are syringe, ampul, medication, and needle all in a single injection unit. Controlled inert gas pressure automatically completes the injection. The advertised was prepared by Murray Breese Associates.

Cherokee Cave and Museum

LEE Hess, president of Halitosine Company, St. Louis, was the sole promoter of the Cherokee Cave and Museum of Natural History, which is located in the heart of St. Louis at 3400 South Broadway at Cherokee Street, only ten minutes from downtown St. Louis and three blocks south of Anheuser Busch Brewery. The Spanish-type museum building houses rooms from a damascus Palace ten centuries old, a display of prehistoric bones found in the Cherokee Cave, beautiful old Colonial mansion built before the Civil War with its surrounding old-fashioned gardens, and the entrance to the largest natural cave in any city its size in the world.

F. D. A. Budget Estimate

THE Federal budget estimate for the Food and Drug Administration for the fiscal year of 1951 provides for a slight increase in enforcement personnel, new scientific equipment, expanded travel, and collection of more samples. In the development of standards, work on 15 classes of food and 10 insecticidal substances is now in process and will be continued in 1951. Imports shipments of commodities subject the act total approximately 177,500 annually, and about 21 per cent of these are inspected, and about 17 per cent of these were denied entry in 1949. This involved collection of about 17,000 samples and 71,300 examinations. A slightly higher level of inspections will be maintained during 1951 with the same staff.

Factory inspections are planned on the basis of the importance of the industry to the consuming public and the seriousness of probable violations of the act. Where violation is indicated, samples are collected from interstate commerce for laboratory examination as evidence for legal action. The facts are reported to the Department of Justice with recommendations for seizure, and/or prosecution or injunction through court action. Enforcement by informal warning is used in the case of minor violations. During the fiscal year 1949, 7,677 of the approximately 77,350 manufacturers, shippers, and warehouses subject to regulation were inspected. In 1950 approximately 8,225 establishments will be inspected, and 8,650 in 1951.

Total appropriations for 1950 are estimated at $5,791,262 and for 1951 at $6,009,260. The breakdown of these figures is:

	1950	*1951*
Development of Standards	$ 198,400	$ 201,900
Import Enforcement Operations	496,700	506,800
Domestic Enforcement Operations	3,823,050	3,945,850
General Administration	276,913	280,230
Pay Increases	98,274	150,155
Testing for other Federal Agencies	41,000	41,500
Certification Services	708,725	736,625
Seafood Inspection	80,200	82,000
Refunds and Deposits	68,000	64,200

F. T. C. Budget Increase

WHILE an increase in the amount of money to run the Federal Trade Commission is forecast for the fiscal year 1951, these funds provide no increase in personnel in the housekeeping and management activities for the operation of the Commission. The estimates for 1950 and 1951 are:

	1950	*1951*
Antimonopoly:		
Legal Case Work	$1,395,900	$1,656,869
Economic and Financial Reports	213,410	429,761
Export Trade	51,540	50,461
Unfair, Deceptive or Fraudulent Practices:		
Legal Case Work	1,085,205	1,044,125
Trade Practice Conferences	240,340	316,893
Wool Act Administration	293,210	293,744
Trade-marks and Insurance	34,150	33,447
Administration:		
Administrative Salaries and General Operating Expense	336,245	374,700
Pay Increases	82,000	125,000
	$3,732,000	$4,225,000

$100 to $150 Million for Antihistaminics

SALES of antihistaminics for colds and allergies—both over-the-counter products and those restricted to doctors' prescriptions—will total $100 million at retail in 1950, and $150 million in 1951, is the prediction of Elliott A. Bowles, of Union Pharmaceutical Co., subsidiary of Schering Corporation. In the three months in which these products have been available on over-the-counter sales, he said, direct-sale brands have achieved a combined retail volume estimated at close to $15 million, with average monthly sales still mounting. Combined advertising expenditures are estimated at $4 million for all manufacturers, with double that figure being the total combined advertising expenditure through April. Mr. Bowles predicts that annual sale of over-the-counter antihistaminics will reach $72 million this year. Prescription products, which he says did about $14 million last year, may double to $28 million this year, resulting in a combined total of more than $100 million for 1950.

Older cold remedies, one doing $100 million at retail, face a dwindling market, according to Mr. Bowles, on the basis of store checks. In the $200 million cold remedy and antihistaminic market forecast for 1951,

he envisions the older remedies doing only $50 million as against $150 million for antihistaminics.

Antihistaminics taken or prescribed for colds being contracted by employees while at work, provide American business plants, stores, and offices with an opportunity to reduce sharply the estimated annual $2 billion economic waste industry suffers because of our 500 million colds a year, claims Mr. Bowles. He explained Union Pharmaceutical's new "cold control plan," by which companies of any size may help workers stop colds on the job in Winter and at about as little cost as they guard against Summer heat fatigue with sale tablets.

Terramycin—New Pfizer Antibiotic

TERRAMYCIN, a new potent antibiotic grown from the newly discovered actinomycete, *Streptomyces rimosus*, has been announced by Chas. Pfizer & Co. It has been found to be highly effective against a wide variety of pathogenic microorganisms, and on the basis of experimental data now available, Terramycin offers great promise in the treatment of numerous infectious diseases. However, until clinical studies have been completed, it is emphasized that the true value of the product as a chemotherapeutic agent in man will not be known. The product is absorbed readily into the body following administration by mouth or by injection. Oral administration of the drug allows effective treatment with a minimum of discomfort to the patient. Animal studies indicate that the toxicity is extremely low, a very favorable fact, since toxicity is quite often a stumbling block in final development of a new antibiotic.

Preliminary clinical studies initiated at the New York Hospital-Cornell University Medical Center, New York, and being expanded in numerous hospitals throughout this country and abroad, are designed to evaluate the effectiveness of Terramycin in treatment of pneumococcal pneumonia, virus pneumonia, hemolytic streptococcal infections, staphylococcal infections, undulant fever, whooping cough, enteric and urinary tract infections, and certain rickettsial diseases such as typhus fever.

When the *Streptomyces rimosus*—from which Terramycin is crystallized—was grown on plates containing nutrient agar, and when a variety of bacteria including certain of the Gram-negative enteric organisms, aerobic spore-formers and Gram-positive cocci were streaked across the plates, growth of the test organisms, was inhibited in the vicinity of the actinomycete. When the Streptomyces rimosus was grown under submerged aerobic conditions, the broth exhibited similar inhibitory powers, as demonstrated in serial dilution assays. From broth cultures of this organism, a crystalline antibiotic was isolated—this was named Terramycin.

The Rack Jobbers

THE so-called "Rack Jobbers" are coming into existence in the East in increasing numbers. These are firms who started some time ago in the West to market products through the grocery super-markets. These firms wholesale about thirty or thirty-five fast-moving cosmetic items, mainly those used by women. They put the items into the supermarket priced so as to include the Federal excise tax. The super-market sells them in the normal way and then pays the jobber the full amount including the tax. The jobber takes care of the payment of the tax and thus relieves the grocery outlet of all responsibility and detail in connection with the handling of the goods. The Rack Jobbers only handle one or two top sellers of each kind. As to men's items, they go so far as to handle a couple of hair tonics, but their items are mainly for use by women. It is said that the extension of this practice to the East is being broadened to the extent that some of these jobbers are not confining themselves exclusively to super-markets, but are going after smaller groceries as well.

F. D. A. Rules Against Dulcin

THE Food and Drug Administration has ruled against the use of dulcin and P-4000 in foods or drugs as artificial sweeteners. The notice says:

"Chronic-toxicity studies conducted by the Food and Drug Administration show that the artificial sweeteners dulcin (also known as sucrol, or 4-ethoxy-phenylurea, or paraphenetolcarbamide) and P-4000 (also known as 1-n-propoxy-2-amino-4-nitrobenzene) cause injury to rats when fed at relatively low levels for approximately two years. Consequently, the Federal Security Administrator regards these chemicals as poisonous substances which have no place in any food.

"Pending further evaluation of available data, it is not possible to state the conditions under which dulcin or P-4000 would render a drug in which it is used dangerous to health. Since other artificial sweeteners are available which have a much greater margin of safety in chronic-toxicity studies, the use of dulcin and P-4000 as sweeteners is to be discouraged."

Patent Suit Against Toni

SUIT was entered against Toni, Inc., last October in the Federal District Court for the Third Division (St. Paul) by Arnold F. Willat of San Francisco. Mr. Willat is the holder of three patents covering cold permanent waving. These are U. S. Patents No. 2,183,894, No. 2,195,803, and No. 2,331,065. These patents were issued in 1939. The first patent, in which David J. Pye is the inventor, covers a method of cold permanent waving using sulfide compounds. The second patent, in which Willat is the inventor, covers cold permanent waving with an alkaline solution at body temperature. And the third patent, in which Willat is the inventor, covers the forcing of the waving solution through coiled strands of hair by means of an apparatus covering the head.

The suit is not for an injunction stopping alleged infringers, but is for damages in the form of royalties on cold permanent wave sets sold. In the complaint it is estimated that Toni has sold 85 million sets, and that 10 cents a set would be a "reasonable royalty," indicating that the damages claimed against this one company would total $8.5 million. The fact that an injunction is not asked in the suit, means that even though the patents were upheld, the manufacturers could go right on manufacturing the product. Another angle is this type of suit is that a suit for damages, such as has been brought, is decided by a jury, while a suit involving injunction is decided by a judge.

Thionyl Chloride Plentiful

THIONYL Chloride, a necessary raw material in the manufacture of the antihistaminic, thonzylamine hydrochloride, sold under various trade-marks such as Neohetramine, Anahist, and Resistab, is now in plentiful supply, according to the sole manufacturer, Hooker Electrochemical Company. The company says that "production has been increased to the point that we are shipping promptly on all current orders and adequate stocks are on hand to meet any increase in demand should this situation arise."

Status of the

AMMONIATED DENTIFRICES

By Milton A. Lesser

The Tooth Powder Man
Drawing, 1870
Bettmann Archive

DURING the past year the drug and cosmetic industry has witnessed a very interesting phenomenon. It has seen unprecedented excitement stirred up over the ammoniated dentifrices. It has watched, with considerable amazement, the number of brands of ammoniated tooth powder and toothpaste that have appeared on the market. Perhaps the most unusual aspect of the whole picture is the fact that the efficacy of these new products still awaits full evaluation. The benefits to be derived from these products and their influence on the incidence of dental caries remain, as yet, an unknown quantity.

There is, of course, no question that a very definite need exists for a product or method for reducing the incidence of dental caries. As noted in a publication of the American Dental Association,[1] dental caries is one of the most common diseases and very few people are naturally free from it. According to Tanz,[2] it has been estimated that between 85 to 95 per cent of people suffer from dental caries to some degree.

More specific is the evidence provided by several comprehensive studies of the incidence and prevalence of dental caries in children which have been made in every section of this country. A composite picture of the findings, cited by Gruebbel,[3] shows that about half of all two-year old children have one or more carious teeth. By the time they reach school age, they usually have three carious teeth. At the age of 16, the average youth has seven decayed, missing or filled teeth. Studies in high schools show that less than 4 per cent of the students are free from caries. He also points to statistics which show that the D.M.F. (decayed, missing or filled) rate is 2.5 pt the age of 10, 9 at the age of 18 and 19 at the age of 30.

Dental research workers have developed a number of theories concerning the causes of dental caries. While there is considerable disagreement among the several groups of investigators, application of certain of their principles offer promise for some degree of caries control. Of the several methods advocated for retarding caries activity, only about half a dozen have attained any degree of importance. As summarized by Kopley,[4] these consist of office treatments such as the application of fluorides or the impregnation technic of Gottlieb, as well as procedures suitable for home use, like carbohydrate-restricted diets, the use of vitamin K chewing gum and the employment of ammonium ion-bearing dentifrices.

Kopely feels that the use of ammoniated dentifrices is a practical and easily applied means of caries propylaxis. Since most people use a dentifrice fairly regularly, the caries-reducing effect is more or less constant. Such a procedure will serve to enhance any program designed to control caries in the susceptible individual. Ammoniated dentifrices may be employed alone or in conjunction with any of the other recognized control methods. This authority stresses that not only is the ammoniated dentifrice method pleasant and easy to use, but in addition it does not interfere with normal habits.

This approach to the control of the caries problem stems from the widely held view[5] that dental caries is a disease of the calcified tissues of the teeth, caused by acids produced by the action of micro-organisms on carbohydrates. The disease is characterized by a decalcification of the inorganic portion and is accompanied by, or followed by, a disintegration of the organic substance of the tooth.

Whether or not the acid formed by the action of bacteria on fermentable carbohydrates will destroy the enamel depends on the strength of the acid and the length of time it is in contact with the tooth. Apparently the greatest damage is done within the first 15 minutes after the ingestion of carbohydrates. Whether or not the acid remains in contact with the tooth depends, in turn, upon several factors, including dental or bacterial plaques, the anatomic characteristics or structure and the position or arrangement of the teeth. A dental plaque, which consists of a substance that adheres to the tooth surface, affords protection for both bacteria and acid and prevents the saliva from washing them away. Dental caries may attack in various locations, depending on the shape of the tooth and its position and arrangement. The areas of the tooth that are most vulnerable to decay are the crevices, fissures and surfaces that are in contact with adjoining teeth.[1]

It is most interesting that this modern concept is essentially a restatement and extension of the theory of dental caries advanced by Miller[6] back in 1890. Those who wish to delve more deeply into the background and growth of this view will find much information in Graber's[7] critical review of local factors in dental caries.

Evidence to support the theory that dental caries is principally a process of decalcification resulting from bacterial activity has been discussed in detail by Kesel and his associates.[8,9] They cite studies which reveal the consistent presence of *Lactobacillus acidophilus* in caries-active mouths and its absence from the oral cavities of individuals resistant to tooth decay. While this association does not necessarily establish the lactobacilli as a specific etiologic factor in caries production, it is pointed out that the relationship has been so generally established that the presence or absence of this organism from the mouth can be accepted as "valid evidence of caries activity." It is recognized that other types of acid-producing organisms have a demonstrable relationship to dental caries. In addition there are many secondary or predisposing factors that influence the active, caries-producing mechanism.

It has long been known that there are persons who have a large degree of freedom from dental caries and who are said to be caries-immune.[10] It has also been known for a long time that saliva provides a natural defense mechanism against caries. Saliva is normally alkaline and is highly buffered. Hence it is quite capable of neutralizing acids. Moreover, as remarked by Rovelstad,[5] saliva contains some substance that is

inimical to the acid-forming bacteria. This substance varies in concentration in different individuals and this variation accounts for the difference in the rate of caries activity in different iudividuals.

Indicative information on the nature of this substance was provided in the report of Grove and Grove[11] in 1934. Their studies pointed to the probability that ammonia was the factor responsible for the caries-inhibiting process. They found that there was a marked difference in the ammonia content of the saliva of caries—susceptible and of caries-immune persons. Thus, the ammonia in caries-susceptible saliva ranged from traces to 8 mg. per 100 cc. while caries-free saliva contained 8 to 20 mg. of ammonia per 100 cc.

Others have made similar observations. Kesel and his associates,[12] for example, were curious to know why *Lactobacillus acidophilus* was absent from the mouths of individuals who were caries-inactive despite their consumption of refined carbohydrates and their frequent exposure to the lactobacillus organism. This curiosity led to the discovery that ammonia has definite inhibiting properties for lactobacilli. They found that the source for the natural production of ammonia in the mouth is its conversion from the salivary urea and amino acids through bacterial activity. These workers[13] also found that individuals who are resistant to caries form ammonia more rapidly in their saliva than do people who are caries-active.

From such studies it became evident that the saliva of caries-immune persons will not support the growth of lactobacilli and related organisms. It seemed quite logical, therefore, to try to create in the mouths of caries-susceptible individuals the conditions which were observed in the oral cavity of caries-resistant persons. One simple and now obvious approach was through the proper use of ammonium-releasing dentifrices.

Following a search for a suitable ammonium salt, it was found that dibasic ammonium phosphate was most satisfactory from the standpoint of a stability, taste and odor. While this salt, used alone, was able to reduce lactobacilli a better, synergistic effect resulted when it was used in combination with carbamide (urea). As is now well known, the combination of dibasic ammonium phosphate and urea achieves what neither substance could do alone in preventing acid formation, stimulating ammonia production and reducing lactobacillus activity.[13,14]

Of course, these facts were obtained only after considerable investigation and testing of various combinations. The formulation and evaluation of ammoniated dentifrices has been done by various groups of workers. Of these, however, two stand out as being particularly important. The first is the group, under Kesel, sponsored by the University of Illinois Foundation. The other consists chiefly of Henchel and Lieber of the Eastern Graduate Research Foundation. Although the end purpose of the research by both groups is the same, their approach to the solution of the caries problem is somewhat different.

Kesel and his associates[12] stress the alteratieth on in oral flora that is seen following the use of an ammonium liberating dentifrice. In explaining this alteration they note that it is not so much the direct result of the inhibiting force that the ammonium ion has on the lactobacilli, but the fact that the ion alters the balance of power in the oral flora and thus permits the proteolytic types of bacteria to fight the battle against fermentation and subsequent caries activity for long periods of time. The proteolytic bacteria, it should be remembered, create conditions inimical to the growth of lactobacilli and related organisms.

In their early investigations, these workers[15] employed a mouth rinse and a tooth powder, each containing 5 per cent of dibasic ammonium phosphate. An experimental group of 45 patients were instructed to use these preparations upon arising and before retiring. A control group of 10 patients was given a rinse and powder of the same formula, but without the ammonium salt, for use in the same manner. In all but one of the experimental group, the *Lactobacillus acidophilus* (l.a.) count was markedly reduced after one year of such treatment, whereas there was no appreciable change in the l.a. count in the saliva of the control group.

On the basis of evidence that urea also serves to reduce the incidence of dental caries, it was decided to combine this agent with the ammonium compound. Laboratory studies indicated that the optimal concentration for clinical use was 5 per cent of dibasic ammonium phosphate and 3 per cent of urea. Therefore the original formula was modified,[16] as follows:

Dibasic ammonium phosphate	**50.0 Gm.**
Carbamide	**30.0 Gm.**
Bentonite	**50.0 Gm.**
Calcium carbonate, precipitated	**846.0 Gm.**
Soluble saccharin	**2.0 Gm.**
Menthol	**2.0 Gm.**
Oil of peppermint	**2.0 Gm.**
Oil of cinnamon	**2.0 Gm.**
Oil of wintergreen	**6.0 Gm.**
Sulfocolaurate	**10.0 Gm.**

It was recommended that patients brush their teeth after each meal, if possible, and before retiring, with this dentifrice. The mouth is not to be rinsed with water following brushing because this will dilute and wash away the active agents before they have an opportunity to exert their influence on the oral flora. It is preferable that the individual refrain from rinsing, letting the dentifrice slowly dissipate itself into the saliva. If, however the patient insists on rinsing the mouth in order to remove debris that has been brushed off the teeth, the following mouth rinse is used so that the effective levels of ammonia and of urea will not be diluted too rapidly:

Dibasic ammonium phosphate	**50.0 Gm.**
Carbamide	**30.0 Gm.**

(Continued on page 202)

F.D.A. VIEWS CERTIFICATION

ACCORDING to Mr. Crawford's statement, the Food and Drug Administration does not seek extension of certification powers, but rather seeks amendment of the certification amendment to eliminate unnecessary or undesirable features. This statement is taken from Mr. Crawford's address before the Section on Food, Drug, and Cosmetic Law of the New York Bar Association, January 26.

Much concern has been expressed during the year about the significance of the certification service for antibiotics, about whether important new antibiotics should continue to be added to the list as they are developed, and if so, whether by legislative or executive action, and about exemptions under authority of section 507 (c) when rejection of requests for certification becomes infrequent.

Records show that since certification of penicillin began in September 1945 the rejections on products marketed in substantial volume have ranged from only 0.3 per cent to 1.9 per cent. Since certification of streptomycin began in April 1947 the rejections on products marketed in substantial volume ranged from 0 to 1.3 per cent. In general, as experience is gained in production the rate of rejection falls. Several manufacturers have had no rejections for more than a year although their production has been substantial.

The low rate of rejections has raised the question as to whether certification should not be discontinued generally under section 507 (c) which directs the Administrator, whenever in his judgment certification of any antibiotic drug is no longer necessary to insure safety and efficacy of use, to issue regulations exempting that drug from predistribution testing and certification, thus leaving it subject only to the other controls provided for drugs which ordinarily can be applied only after substantial distribution and use.

It was pointed out that three basic considerations were responsible for the enactment of section 507, which originally included only penicillin. First, the drug was important because it was highly efficacious in the treatment of crippling or fatal diseases occurring among large numbers of our population. Second, the drug was produced by biological methods which even in the hands of competent manufacturers were imperfect and difficult, in consequence of which there was an important lack of uniformity in batches of the finished product. Third, the methods then available for assaying the finished drug, even when applied by competent scientists, gave results too uncertain and variable to permit evaluation of the safety and efficacy of the product with reasonable certainty.

It has been suggested that these three considerations which underlay the enactment of section 507 should be accepted as the criteria for decertification under 507 (c) and that if conditions are so changed that any one of the three no longer exists the certification requirement should be lifted.

It seems to us that in applying section 507 (c) it is the Administrator's duty to take into account all facts that reasonably bear on the necessity or lack of necessity for certification "to insure safety and efficacy of use." We do not believe that the statements describing the factual situation with respect to penicillin at the time of enactment necessarily constitute all of the factors the Administrator should consider at a future time in action under section 507 (c). We think he is required to decide whether or not the certification of a particular drug, in the light of the circumstances existing at the time of the decision, is necessary to insure safety and

*Deputy Commissioner of Food and Drugs, Food and Drug Administration.

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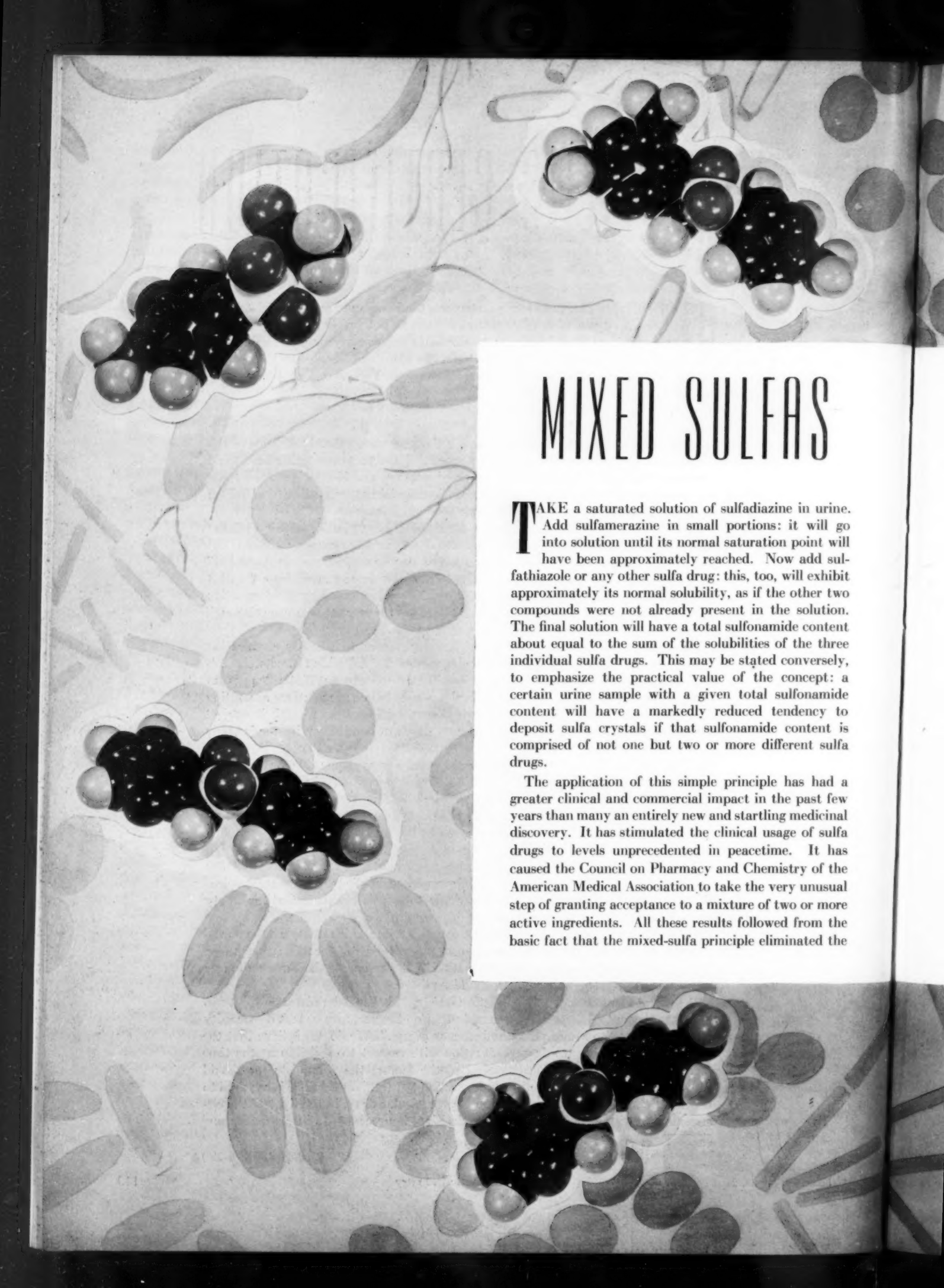
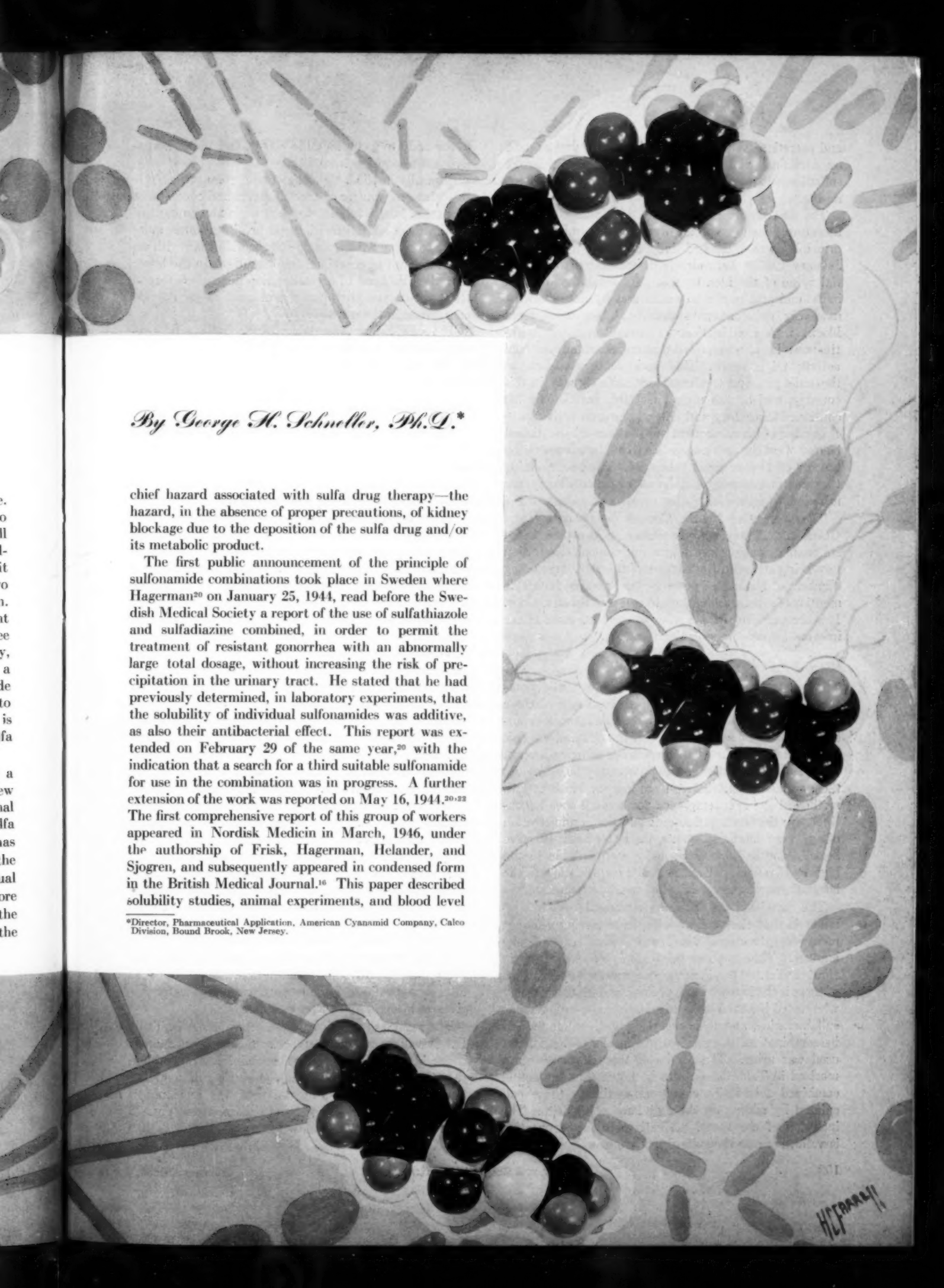


MIXED SULFAS

TAKE a saturated solution of sulfadiazine in urine. Add sulfamerazine in small portions: it will go into solution until its normal saturation point will have been approximately reached. Now add sulfathiazole or any other sulfa drug: this, too, will exhibit approximately its normal solubility, as if the other two compounds were not already present in the solution. The final solution will have a total sulfonamide content about equal to the sum of the solubilities of the three individual sulfa drugs. This may be stated conversely, to emphasize the practical value of the concept: a certain urine sample with a given total sulfonamide content will have a markedly reduced tendency to deposit sulfa crystals if that sulfonamide content is comprised of not one but two or more different sulfa drugs.

The application of this simple principle has had a greater clinical and commercial impact in the past few years than many an entirely new and startling medicinal discovery. It has stimulated the clinical usage of sulfa drugs to levels unprecedented in peacetime. It has caused the Council on Pharmacy and Chemistry of the American Medical Association to take the very unusual step of granting acceptance to a mixture of two or more active ingredients. All these results followed from the basic fact that the mixed-sulfa principle eliminated the



*By George M. Schneller, Ph.D.**

chief hazard associated with sulfa drug therapy—the hazard, in the absence of proper precautions, of kidney blockage due to the deposition of the sulfa drug and/or its metabolic product.

The first public announcement of the principle of sulfonamide combinations took place in Sweden where Hagerman[20] on January 25, 1944, read before the Swedish Medical Society a report of the use of sulfathiazole and sulfadiazine combined, in order to permit the treatment of resistant gonorrhea with an abnormally large total dosage, without increasing the risk of precipitation in the urinary tract. He stated that he had previously determined, in laboratory experiments, that the solubility of individual sulfonamides was additive, as also their antibacterial effect. This report was extended on February 29 of the same year,[20] with the indication that a search for a third suitable sulfonamide for use in the combination was in progress. A further extension of the work was reported on May 16, 1944.[20,22] The first comprehensive report of this group of workers appeared in Nordisk Medicin in March, 1946, under the authorship of Frisk, Hagerman, Helander, and Sjogren, and subsequently appeared in condensed form in the British Medical Journal.[16] This paper described solubility studies, animal experiments, and blood level

*Director, Pharmaceutical Application, American Cyanamid Company, Calco Division, Bound Brook, New Jersey.

and excretion studies in human beings, as well as data on a clinical trial of a combination of sulfathiazole, sulfadiazine, and sulfamerazine, which yielded excellent results.

The first report to appear in the English language literature, dealing specifically with the mixed sulfa principle, was published independently by Lehr in January 1945.[27] Lehr clearly demonstrated the potential value of the idea by means of solubility data on individual and combined sulfas and by data showing markedly reduced acute toxicity (absence of renal block) with combinations of sulfadiazine and sulfathiazole. He also suggested that enhanced antibacterial activity might result. This report established Lehr as the chief proponent of combined sulfa therapy in this country, and he has maintained this position by his continued laboratory and clinical research activities.[34a] A number of his subsequent publications are mentioned below. Certain previous publications by others[24,37] on the use of two or more sulfas jointly, while claiming therapeutic advantage, did not visualize clearly the mixed sulfa principle.

The acceptance by the Council on Pharmacy and Chemistry of preparations containing two[38] or three[11] sulfonamides signifies the growing clinical recognition now being accorded to this form of therapy. Increasing numbers of clinicians[5,7,19,21,23,36,45] are making favorable mention of sulfa combinations in their published articles. It is the purpose of this review to correlate some of the information contained in the literature.

The Sulfa-Combination Principle

It is generally known that the most important difficulty in sulfonamide therapy was a tendency of these drugs to produce kidney blockage caused by an accumulation of crystals and concrements in the tubules. This condition may occur when the volume of urine is scant or the sulfonamide dosage is high, because the sulfas and their metabolic derivatives have low solubilities. Two methods have been employed to forestall such a contingency: the forcing of liquids and the administration of adjuvant alkalizing agents, the latter being effective because the sulfas are generally more soluble in the higher pH ranges. The use of sulfa combinations is the latest answer to the problem of renal precipitation.

The chemical basis for the use of combined sulfonamides is that the various sulfa drugs having different molecular structures dissolve independently of one another. This fact has been amply confirmed by *in vitro* studies.[15,16,27] Perhaps the most comprehensive of these is the investigation of Frisk and his coworkers,[16] who tested the solubilities of sulfathiazole, sulfadiazine, sulfamerazine, and their acetyl derivatives, singly and in combination, at varying pH levels. The solvent used was urine. The results of these tests are summarized in Table I. It is to be noted that the actual combined solubilities closely approximate those calculated by adding up the individual solubilities. The inclusion of the acetyl derivatives in this connection is valid, because the sulfa drugs are usually acetylated in the body to a considerable extent, and these derivatives are also of low solubility.

Clinically applied, the sulfa-combination principle is this: since the danger of crystallization and concrement formation in the tubules depends upon the amount of a sulfa drug administered, renal precipitation is more likely to occur with a single sulfonamide than with an equal amount of combined sulfonamides. In the latter case the likelihood of crystallization depends not upon the total dosage but upon the amount of each single component in the mixture.

The validity of these laboratory solubility findings when applied to the practical conditions encountered in the clinic has been challenged[17,18] but promptly supported.[33,41]

Clinical Investigations

Experiments with laboratory animals have confirmed the theory. Both by direct observation of concrements as formed in the kidneys[16] and on the basis of deaths due to kidney blockage,[30] sulfa mixtures were shown definitely superior to single sulfonamides.

These conclusions have been adequately confirmed in the clinic. By extensive studies in adults and children Lehr and his coworkers[28,30,43] have shown that combined sulfas without adjuvants of any kind give rise to a remarkably low incidence of crystalluria. In a study of 400 patients, Snyder[44] compared the incidence of crystalluria in patients receiving a mixture of sulfadiazine and sulfamerazine with that of patients receiving one sulfonamide plus an equal quantity of sodium bicarbonate. The dosage for the sulfas ranged from 4 to 6 grams daily. In the group receiving the combined sulfas, the incidence of crystalluria was 20 per cent as compared with 42 per cent for those receiving the single sulfas plus sodium bicarbonate. Shore, Flippin, and Reinhold[42] recently reported that the use of a sulfadiazine-sulfamerazine combination in a series of 169 patients resulted in a frequency of sulfonamide crystals in the urine comparable to that observed when sulfadiazine was administered with six grams of sodium bicarbonate daily.

Two of the latter authors, Flippin and Reinhold,[15] in a comprehensive investigation compared the precipitation of sulfonamides, when given alone and with adjuvant alkalis, and also sulfonamide mixtures. Three-quarters of the cases were pneumococcic pneumonia and the remainder, meningococcic meningitis. Fifty-four patients were given combined sulfas without adjuvant alkalis. All sulfonamides were administered in total dosages of 4 to 6 grams daily. Sufficient water was given to insure a high urinary output.

The results of this investigation are given in Table II. It will be noted that the incidence of crystalluria is considerably less for patients receiving the combination than for those receiving the single sulfonamides. For patients receiving the mixture, the incidence is the same as for those receiving sulfamerazine plus 12 grams of sodium bicarbonate daily.

(*Continued on page 215*)

RIGIDITY OF THE F.T.C. AND F.D.A.

HUGO Mock, Counsel for the Toilet Goods Association, criticizes the uncompromising inflexibility of the Federal Trade Commission and the Food and Drug Administration with respect to claims of manufacturers. Many telling instances are given by Mr. Mock in this abstract of his address before the Food, Drug, and Cosmetic Section of the New York State Bar Association, January 26.

"The Federal Trade Commission and the Food and Drug Administration has been unnecessarily rigid in its standards of advertising of cosmetics and drugs, more rigid than is required for the protection of the public and with possible disadvantage also of preventing much of the logical development of both industries," said Hugo Mock, Counsel for the Toilet Goods Association, before the Section on Food, Drug, and Cosmetic Law of the New York State Bar Association, on Janaury 26. "Where there has been widespread damage to health of the public by circulation of harmful drugs and cosmetics in the last decade, such damage has in most instances occurred through inadvertence and in unexpected places and in many instances the first information as to the circulation of these products came from the manufacturers themselves," said Mr. Mock.

Expressing the opinion that the courts are more liberal than the Federal Trade Commission, Mr. Mock said that "the Courts have lent their sanction to the use of the word 'ideal' and we not only have ideal perfumes and cosmetics, but ideal pens and hundreds of other ideal articles.

" 'Miracle' is another word which has received the sanction of the government inside and outside of the Patent Office and we have miracle perfumes and miracle salves which are lawfully sold. However the Federal Trade Commission has said that rejuvenescence is misleading in the implication that a visit to the fabled fountain of Ponce de Leon is unnecessary." Mr. Mock cited the court decision upholding "Holeproof" as a valid trade-mark for hosiery in which the court said: "No one surely could be misled into the belief that holes will not appear in complainant's socks if they are worn long enough, and it is difficult to conceive that any one could be fatuous enough to suppose that by the use of such a word he could deceive people by inducing a belief that the goods to which it was applied would never wear out."

"As an example of the unsatisfactory working of some of the Federal Trade Commission cases," said Mr. Mock, "I cite the Bristol-Myers case. In the first place, the complaint in this case was issued October 28, 1942, and a cease and desist order was issued November 15, 1949. It would seem that if the public welfare were involved in this case and the use of the respondent's goods was deleterious to the public welfare, it should not have taken seven years to come to a conclusion about the advertising involved. The case is being appealed and I, therefore, will mention only one paragraph of the cease and desist order which precludes the respondent from disseminating any advertisement which says 'that modern cooking or current diets or soft well-cooked foods do not give the gums the exercise and stimulation they need or that such diets or foods make the gums susceptible to trouble.' In other words, you must not advertise that gums need exercise.

"It is difficult to fight either the Food and Drug Administration or the Federal Trade Commission if it has a set policy and for that reason many a small manufacturer who has not the will or resources to fight the Federal Trade Commission

(*Continued on page 233*)

DEODORANT PREPARATIONS

THE general theories regarding deodorants and anti-perspirant preparations have been discussed in great detail and is generally available in the regular cosmetic literature. Rather than repeat what has already been said, it may be more desirable to trace the evolution of these preparations and include in their summation new developments which have come into use more recently.

There is a marked distinction made between anti-perspirants and deodorants though there is an overlapping of function on the part of the anti-perspirant. For the sake of greater simplicity, however, deodorants are usually regarded as preparations having deodorant functions without having any appreciable anti-perspirant activity while anti-perspirants presumably are capable of stopping the perspiration flow and at the same time retarding the development of the odor associated with perspiration. The reason for these statements lies in the composition of perspiration. It consists essentially of water containing a small percentage of salt and organic matter, chiefly urea. The organic substances themselves are not odoriferous in character, but are susceptible to degradation by bacteria to produce objectionable smelling compounds. Two obvious methods by which these compounds may be kept from forming are first by stopping the perspiration flow and second by introducing into the field an effective bactericide or bacteriostatic compound which would interrupt the normal cycle by which these compounds are formed. Since the perspiration itself when freshly emitted by the sweat glands is non-odorous, the destination of the bacteria in the field responsible for its degradation would prevent the formation of the compounds responsible for the odor.

The most effective method used to stop the perspiration flow was to block the sweat glands and this was accomplished by coagulation of the proteins in its vicinity. There are a host of substances which are capable of performing this function, and in the past acetic acid, lead salts among others have been used. The United States Pharmacopoeia has listed an anti-perspirant which consists of an aluminum chloride solution in water to which a small amount of hydrochloric acid has been added. This latter is an extremely effective anti-perspirant, but is somewhat irritating due to the low pH of the system. The development of the anti-perspirant has been along dual lines. First to lower the pH of the system and still keep the aluminum ion in solution, so that the product could be both effective and relatively non-irritating and second to incorporate it into an emulsion vehicle so that it could be used as a cream because of greater ease of application of the cream as compared to the liquid. Reduction of pH may be thought of as being relatively easy but it should be remembered that it is apparently the aluminum ion that is responsible for anti-perspirant activity For example equimolar amounts of aluminum acetate and aluminum chloride will not have the same efficiency, since aluminum chloride is much the more effective agent. Aluminum chloride in solution also is ionized to a much greater degree than is the acetate and therefore the aluminum ion is supposedly the effective agency. Indeed, aluminum chloride, as such, is still considered the most effective of any of the anti-perspirants possible to use.

There were a good many features about aluminum chloride which made its use as such somewhat undesirable. In addition to the incidence of irritation its use brought about, its low pH in aqueous solution caused it to attack cotton clothing with which it had contact, causing holes to form. There was a generalized shift to the use of aluminum sulfate since its aqueous solution had a higher pH and was therefore less of an irritant and did not attack cotton clothing as readily. Aluminum sulfate, though an improvement, was less effective as an anti-perspirant. Its use, in addition, did not overcome completely the irritation and cloth damaging factors associated with the chloride. The use of a buffer was clearly indicated.

The first significant advance in this direction was contained in a patent issued in the early 1930's which taught that urea effectively buffered solutions of aluminum salts while still allowing the salts to retain their activity as anti-perspirants. Other methods followed with increasing rapidity, but for a fairly long period the aluminum sulfate urea preparations seemed predominant, and by many authorities were thought to be the best preparation when all factors were considered.

By Harry Hilfer

In the use of urea, however, there is a definite loss of efficacy because of the use of the buffer. It is true that the reaction on cotton is greatly retarded by its use as well as the incidence of irritation, but since the primary purpose of the preparation is to stop the flow of perspiration, a fair amount of judgement must be used to ascertain at which point the preparation will still be effective as an anti-perspirant as well as safe against cotton damage and irritation. Since individuals differ in their reactions to anti-perspirants the problem becomes all the more difficult. Actually, the only method by which the degree of efficiency of the preparation as compared to irritating and cloth destruction factors, can be gauged is by a statistical record covering a large number of users who are systematically examined. The effect on fabrics, however, can easily be determined by any of a number of methods of which those of the Good Housekeeping Institute and the American Laundry Institute are the best known.

Other methods of buffering aluminum salt solutions in addition to the use of urea consist of the use of basic aluminum salts. Since the aluminum ion is tri-basic, soluble aluminum salts containing at least one free OH group can readily be formed. There has been a good deal of argument, however, as to the relative merits of these preparations as compared with urea, but there are good sized groups of proponents of both. Here again, formulations must be made with a good deal of discretion, since too great a buffering activity is accompanied by loss of efficiency.

The efficiency of anti-perspirant preparations are influenced by other factors than the salt buffer ratio. There are definitely interferences due to the ingredients used in conjunction with them in creams for example. Miss Ruth Bein of the Good Housekeeping Institute, showed that unless the preparation is properly formulated there could be a separation, after application, of the aqueous phase of the cream accompanied by a low pH of the separated phase than of the cream itself, which would indicate that a hydrolysis of the salt has occurred accompanied by the metallic ions remaining in the lipoid phase while the acid ions drift with the separated aqueous solutions. Thus the pH of the finished preparation need not necessarily indicate the degree of relief from irritation and cloth deterioration it will afford. This phenomenon of course does not exist in a straight solution of the salts.

The answer to this phenomenon would appear to be an emulsion of greater stability, but here again it has been shown that the greater the stability of the vehicle the lower is its efficiency.

Anti-perspirant creams still seem to be the most popular of the anti-perspirant preparations, and therefore, it seems fitting to speak of their formulation. They are generally made by the use of glyceryl monostearate plus at least one other emulsifying agent. This agent may be chosen from a long list of emulsifiers of the soapless type. They may be cationic or anionic in character, though the most popular seem to be the anionics. In addition, other stabilizers are in fairly common use. Care should be exercised to be sure that the agent chosen is not prone to hydrolysis or other deterioration at the pH of the system, since such deterioration may be accompanied by the destruction of the emulsion as a lowering of the pH to an irritating level. In the use of urea the temperature of the system should be below 45° C. on its introduction because of the danger of conversion of urea to ammonium carbonate at a higher temperature. The ammonia thus formed will produce an aluminum ammonium complex which may crystallize out of solution on standing causing the creams to be filled with sharp hard impurities which are not to the best interests of the product as far as the ultimate consumer is concerned.

These preparations are characterized by a high water content and as such are prone to water loss through evaporation. The best method of counteracting this tendency is to have a tightly sealing cover to the jar and to design the container so that a minimum amount of surface is presented for evaporation.

A significant advance in the marketing of anti-perspirants has recently been made by the presentation of a liquid solution of the effective agencies packaged in a pliable plastic bottle, manufactured from polyethylene. The bottle has a spray type of orifice embedded in its neck which is connected to tubing at the bottom and is immersed in the liquid. Application of sudden pressure

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PHARMACEUTICAL MARKETING

Part 1

*By John H. Hawley, Jr.**

THE INTERPRETATION AND PRACTICAL USE OF MARKETING RESEARCH DATA IN THE PHARMACEUTICAL INDUSTRY**

IT IS difficult to point to an industry, whose goods are as widely distributed by consumer retail outlets as are those of pharmaceutical concerns, which employs marketing research less as an implement to aid in the formulation of sales and management policies. Today, no more than a handful of the nation's ethical pharmaceutical manufacturers deliberately include continuing studies of markets in the mass of data it habitually reviews when it charts current and future merchandising procedures.

If you will face facts, when considering the industry status of marketing research, you will find that several factors have deterred a full blown development of market analyses as a necessary business tool. First, and probably foremost, the economic need for close evaluations of markets has not been a pressing one in this industry where high mark-ups over and above manufacturing costs have turned many potential merchandising failures in profitable business ventures. When profits are considered "satisfactory" it is difficult to persuade many concerns that they should spend a part of those profits to study ways and means to obtain more income. Opulence breeds inertia.

Second, years of experience in pharmaceutical selling have developed several pat formulae which apply with reasonable success not only where a concern markets a new drug specialty, but where sales efforts are devoted to the maintenance of the established products which form the bread and butter of most businesses. The bogey of the "tried and true" basic routines frequently stifles imagination and precludes experimentation with new sales techniques. These techniques may be eminently successful in other industries—but "the ethical drug industry is another breed of cats."

Nor should one overlook the fact that many pharmaceutical executives consider the clinical research, which precedes and parallels the initial development of a pharmaceutical product, as a highly specialized and most efficient substitute for formal marketing research which normally stresses commercial equations. Basically physicians' prescriptions are the prime movers of drug specialties and, hence, the physicians' evaluation of the worth of any given drug often becomes the bible which formulates company plans.

I tell you, yes, it is basic; but don't bank your last dollar with the expressed interest of doctors as your only security. Hard experience, with the facts market audits provide, teaches one that it is frequently very profitable to heavily discount the reported medical preference for various drugs. Too many times drug usage surveys conducted amongst physicians turn up data which reads like the latest J.A.M.A. review of the literature, whereas continuing prescription audits turn up diametrically opposed findings. Too many times the "old" experiences a rebirth along with the development of the "new."

National demand—there is a real bogey! How many times has it been suggested that once your product is past the F.D.A., and papers by reputable authorities have created a ready market throughout the nation for a portion of your goods, you should commence selling! Has it not been reiterated that you should have the sales "know how" rather than the need for market explorations!

The fundamental fact is marketing research is not sufficiently well understood. Market analyses should

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both precede and follow the sale of any specialty item of reasonable worth. It is submitted that Marketing Research is the family doctor of the pharmaceutical house. As such it should be consulted at conception, or once a new drug looks promising in early pharmacological studies. The pregnancy, or clinical research stage, should find marketing exploring ways and means to assure a healthy birth and a lusty offspring. And from the first cry, or sale, until its demise, continuous studies of its health, or sales, should attend it so that a full maturity and productive life may eventuate for the product.

To be very practical there are few industries which stand to gain so much from market analyses and an improved sales return resulting from the intelligent utilization of marketing studies as does the pharmaceutical industry. Few kinds of businesses enjoy, through high mark-ups, the same opportunities for generous profits.

Again, to be practical, it is believed that this presentation will serve best if it deviates from an exposition of fundamental principles of Marketing Research and gets down to the base line of actual case histories of marketing studies, why they were instituted, what was found, and how results were used.

First, and foremost, it should be asked what market areas are amenable to profitable market research? Obviously market analyses, which may be technically interesting but promise little in the way of tangible returns, are an economic waste.

High on the list should be placed a continuing study of the prescribing habits of physicians. This means a month in and month out check of new prescriptions so that you may be informed not only what items have a high demand level but what products have a competitive growth rate which merits your attention. I know no better way to reconcile what physicians claim they write with actualities than to audit the prescription facts.

There are many "old" products which would come back to the promotional wars backed by a well planned campaign, if manufacturers but realized the volume of business being consumated by merchandisers of some competitive products, which have been unceasingly promoted. It is not the spectacular therapeutic results which the new product achieves that should determine when you should curtail the promotion of an existing specialty so that you may spend your money more profitably elsewhere. That point is only reached when doctors actually begin to cease writing their customary volume of prescriptions for your item. Quality products carry on.

As of today the top prescription specialty in retail drug channels continues to be some form of Empirin Compound. It can be asked if competitors eased off too soon with their promotional drives—or even a more basic question. Is it possible that the market of the single largest sales item, as measured by its prescription frequency, is not an inviting challenge to some medical research unit because the field is not one where the conquest of disease is the paramount objective? Certainly a commercial opportunity exists.

Let us take another example of how you may gain a commercial advantage from the study and use of a prescription survey. The sedative and hypnotic market remains the single largest sales field in the drug industry, again as measured by the prescription frequency rate. And all of the leading sales items are either barbiturates or narcotics which are restricted not only as to sale but in many states are non-refillable prescription items. Does not this present another medical research challenge?

Or take another problem. Have you ceased your medical research or curtailed your promotional expenditures in the sulfonamide field because of the phenomenal rise in antibiotic sales? If you have, here is an interesting statistic; through 1949 there was a 40 per cent better opportunity to get a specific manufacturer's sulfonamide prescribed than his antibiotic. This ratio has held constant for many months in top-flight prescription pharmacies.

The above illustrations of the prescription survey's value are not the unusual but simply a few out of hundreds. There are other basic values which cry for the use of such analyses. For instance, how many times have you seen literally thousands of dollars sunk into the promotion of a new drug in a mass market such as the antihistaminic sales field, or a specialized market, such as would be represented by anticonvulsants? If you have ever stopped to calculate the economy of these sales moves, you could gain much from reviewing these sales costs in the light of business produced by these merchandisers. I believe one case history would show that you cannot gain enough prescription support in an established mass market without a definitely superior drug to justify top-heavy sales costs. In the second instance, you might learn that if you gained all of the prescriptions they would support only the most modest promotional effort.

The situations just outlined involve principles which are constants in all sales situations including fields where average sales items are concerned. If anything, it is the so-called normally good sales field which should receive the most attention from marketing research. We are all inclined to over-estimate or under-estimate sales potentials in markets which are not dynamic or specialized ones.

Now, how might marketing research aid you to successfully launch a new drug specialty? In the approach to an evaluation of a new market three steps are logical.

1. Study your clinical data which covers the indications for your drug, including their frequency, together with reports related to drug efficacy. It is particularly important at this point that you identify the products currently employed by physicians to control the conditions for which the drug is indicated and the strengths of weaknesses of each possible competitive item.

2. The next step should be an analysis which shows the sales vitality of the market—particularly the new prescription rates of all products which may be competitors. Here your prescription survey, if it has a sufficient back-log of time, will speak volumes.

3. Make an actual drug store audit (and include hospitals when the product indicates this need) of the sales of the principal competitive items, sectionally if you must, but preferably on a National basis, so that you may identify the added increment to markets which may stem from refills of old prescriptions or over-the-counter sales. This is highly important if you wish to tie down sales potentials. In this phase of the work it usually is desirable to employ outside marketing counsels who have the machinery set-up to provide flowing data covering a period of time. There are many competent organizations available such as Dun & Bradstreet, The Psychological Corporation or the A. C. Nielsen Company whom Ciba currently employs.

If you follow these three steps, you should come up with the facts necessary for an integrated sales plan for your new product. And it should contain a minimum of wishful thinking of the kind that leads to over-estimates of potential sales and, consequently, lost profits due to promotions and production runs that do not fit markets.

If you have sat in on many meetings which have led to the formulation of marketing campaigns for new items and later have reviewed results, with the added knowledge hindsight supplies, you will find that the rush jobs which lacked complete planning have produced some weird results as measured by comparing merchandising successes and failures with sales anticipations. Personally, I am not completely happy about some past "guess-timates" which were based upon inadequate data. Then there has been the sound work which has been fruitful and satisfying.

Before the problem of market analyses, designed to support line sales items, is approached, let me go back to one more thought regarding new items. It has been noted that clinical research sets the stage for the new product's debut in that it writes the lines which become the cue not only for the initial marketing research studies but the sales plans which are drawn from the meat procured in both forms of research. Your Medical Service Division, staffed by physicians, is a group from whom your Marketing Research Division should never stray too far away. This staff adjunct to Sales is charged with developing the clinical studies of your new drug, the encouragement of papers by the clinicians employing the product and the development of new avenues of usage for the item. New and unsuspected indications often spell the difference between high volume sales and returns which fall within the narrow limits of the original research. Often secondary market analyses are the more vital projects.

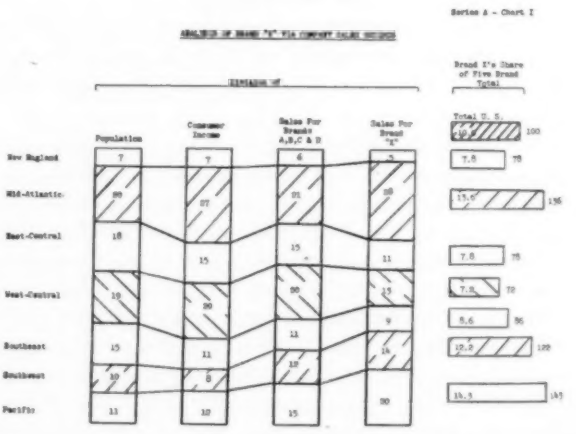
Let's drop, for the moment, all but the run-of-the-mine research which should form the backbone of the task assigned your Marketing Research Division and explore both the kind of drug products you should research and the potential values you may receive from your research efforts. In covering this data, where possible, illustrations will be taken from actual case histories. Both Company and Nielson data will be employed.

It is the practice at Ciba to confine market studies so far as possible to fields where the results of studies may have a tangible use value over a period of time. Products investigated, consequently, either are a part of a dynamic market (i.e. antihistaminics) or are sold in a field which has a definite positive trend because the drugs are associated with basic therapeutic regimens which are designed to control common place ailments (i.e. gastrointestinal disorders, endocrine deficiencies, the common cold, etc.).

Let's look at some concrete illustrations of the practical value of research. Take this situation: You are promoting Brand "X" in a solid sales field with what appears to be unsatisfactory sales results. Sales are very spotty in that some sections of the Nation show a high level of returns, whereas others indicate an over-all promotional job which is inadequate. A request comes from Management, or Sales, which asks you to explore the field and diagnose the sales situation faced by the Company.

There are two kinds of general jobs which your Marketing Research Division may undertake. One would be an analysis which would relate internal statistics to general market indices such as the distribution of population and wealth. The other study would relate both internal statistics *and competitive data* to such indices. You may ask, how would the results differ! Let's look at some results.

Chart I, Series A



You will find in the two left-hand columns data depicting two basic market indices, population and spendable consumer income. These have been distributed to show the weight of their distribution by broad geographical areas. In the third column there is set forth the distribution of cumulative sales realized from four other Company products "A", "B", "C" and "D". These divisions depict *factory sales records*

(*Continued on page 235*)

F.D.A. AND ANTIHISTAMINICS

THE status of the Food and Drug Administration with respect to the antihistaminic drugs for colds was carefully explained by Federal Food and Drug Commissioner P. B. Dunbar when he appeared before the Appropriations Committee of the House of Representatives last month. Dr. Dunbar's comments on the efficacy of new drugs, as distinguished from the safety of new drugs, is exceedingly clear, and should be of particular interest. The part of his testimony covering this subject in answer to questions by Representative E. H. Hedrick of West Virginia, and Frank B. Keefe of Wisconsin, follows: *Dr. Dunbar:* "I thought, Dr. Hedrick, that you might want to know about these so-called antihistamine cold remedies. There has been a lot of misapprehension about them. I rather thought you would ask me a question and I am more or less prepared to answer. I thought you would probably say 'Why did the Food and Drug Administration ever approve these things?' Well, I am right here to tell you that the Food and Drug Administration has not approved them.

"Here is the situation, and I think this ought to be made clear: You may remember and Mr. Keefe certainly will remember that back in 1937 we had that tragedy when elixir sulphanilamide was put out without any tests to show its poisonous qualities and it killed some 107 people. We had the job of chasing down some 240 gallons of that medicine and we got a lot of it back from the market. Congress immediately reacted and inserted in this present law which was then undergoing its final consideration, section 505, which is the new drug section. This section requires the manufacturer of a new drug to submit convincing evidence to the Administrator that the new drug is safe for use under the conditions prescribed on the label before it is put on the market.

"We have processed over 7,000 new drugs under that section since 1938 when this law went into effect. Among such drugs were the sulfa drugs and the antibiotics; the miracle wonders. Drugs that are wonderful in the treatment of disease, but which if improperly used may result in considerable danger. We received new-drug applications for these so-called antihistamine cold remedies. We satisfied ourselves, not only from the reports of the manufacturers, but also by contacts with competent medical men who have employed these drugs for a material length of time, that they would be safe, if they were not taken in excess of the dosages recommended on the labels. All we could do then since they were safe was to permit the new drug application to become effective—and incidentally, Doctor, the dosage recommended is only about a quarter or half what physicians generally prescribe, where they are dealing with hay fever or some allergic condition and even colds. At the same time, we notified the proponents of the sale of these antihistamine cold preparations, that we were definitely skeptical about their claims for treatment of colds in spite of the enthusiastic reports of some physicians. We recognized that colds in some instances may be regarded as due to allergies and if they are due to allergies that these products may have a preventive effect. However, to start with, nobody can be sure, so far as I am aware, of all the factors responsible for the common cold. We are thoroughly skeptical as to the universal value of these products, but we cannot take a remedy into court on a misbranding charge until we have evidence based on controlled experiments. We will not have such evidence

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STEROIDS IN ARTHRITIS

ANOTHER anti-arthritic drug of the steroid hormone type called Artisone, has been developed by Wyeth, Incorporated, and Syntex, S. A., Mexican manufacturers of steroid chemicals from vegetable sapogenins. Announcement of the new drug was made last month at the Regional meeting of the American College of Physicians in Philadelphia. Clinical tests reported were conducted in the Arthritic Clinic of the Hahnemann Medical College and Hospital, and showed Artisone to be effective in the treatment of eighty per cent of rheumatoid arthritis cases which included patients with varying degrees of severity of the disease. In cases of mild and severe arthritis, Artisone was completely successful; but it was ineffective in very advanced cases. The report on the effects and mode of action of the new drug was presented by Dr. Donald R. Fitch, instructor in medicine, and Dr. Peter J. Warter, associate in medicine at Hahnemann, and Dr. Joseph Seifter, director of the Wyeth Institute of Applied Biochemistry.

Artisone, is identified by steroid chemists as delta 5, pregnene, 3 beta, 21 diol—20 one—21 monoacetate. Unlike Cortisone or ACTH, the new product can eventually be made in very substantial quantities and economies in large scale commercial production are expected to reduce its cost. The raw materials necessary to produce Artisone are readily available from the roots of wild Mexican plants referred to by the natives as yams. According to officials of Syntex, the sapogenin from which Artisone is derived is already available in limited quantities. All present supplies of the drug now in the hands of Wyeth, Incorporated. are being used for further clinical study.

Artisone, which is said to be the forerunner of new steroid hormone-like substances, was first introduced as a possible therapeutic agent for rheumatoid arthritis through the brilliant collaborative teamwork of the Wyeth Institute of Applied Biochemistry and the Research laboratory of Syntex, S. A. The former, under the direction of De. Seifter, conducted the biological evaluation of the numerous compounds produced in the laboratory of Syntex in Mexico. After it was discovered that Artisone was effective in rheumatoid arthritis, Syntex research chemists synthesized a large number of compounds, changing the molecular structures of the compound according to comments provided by Dr. Seifter's biologists. Several of these new compounds seem to hold promise of effectiveness equal to Artisone, it is said. An elaborate program for further clinical testing has been established.

Since the discovery of its pharmacological effect last November, Artisone has been administered experimentally at the Hahnemann Hospital to fifteen patients suffering from rheumatoid arthritis, including three very advanced cases. Nine of the patients were ambulatory and able to engage in their usual activities. The remaining six were bed-ridden arthritics. After varying periods of treatment with Artisone, three patients showed moderate improvement, while nine showed marked or very marked improvement. The three very advanced cases did not respond.

Two cases are described as typical. One is a 65-year-old wife who had rheumatoid arthritis for seven years. She had difficulty in walking, her joints were swollen and painful, and she could not raise her right arm high enough to comb her hair. After three daily injections of Artisone she had regained full motion of her right shoulder. On the fifth day there was improvement in her walk and the swelling, pain, and tenderness were reduced. Improvement continued over the next two weeks in spite of her increased activity. Her daily dosage of Artisone now has been cut down and she is experiencing no return of pain or loss of functional improvement.

The other is a 19-year-old college g'rl who has had rheumatoid arthritis for two and one-ha f years. She had involvement of the knees, wrists, shoulders, and joints of her feet. She walked with a shuffling gait and required from one and a half to two hours every morning to get out of bed and dress. After three days of Artisone therapy considerable gain was noted, and after five days there was a marked reduction in swelling, tenderness, and pain, and a marked improvement in her ability to get about. She noted only a slight stiffness on arising in the morning. She now walks with a normal gait and, after a month of treatment, has had no relapses.

The story behind Artisone is one of step-by-step pharmacological and medical investigations beginning about five years ago. At about that time several investigators began research involving the effects of stresses and strains of modern life on the body's glandular system and their relation to the so-called "degenerative diseases," or "diseases of civilization."

Dr. Seifter became interested in the specific effects of the various secretions given off by the outer shell, or cortex, of the adrenal glands on the synovial membrane (membrane of the joints). The cause of rheumatoid arthritis has been attributed to the enzyme hyaluronidase attacking the synovial membrane and to desoxy-

corticosterone intoxication due to various stresses. He found that either compound increases the permeability, or liquid-transfer-ability, of the synovial membrane in anesthetized rabbits, thereby simulating the initial lesion of arthritis. This gave a screen or method for testing the anti-arthritic qualities of certain steroid compounds. By injecting a dye into a joint cavity of a test rabbit and measuring the time required for the dye to show up in the animal's urine, he could obtain an accurate measure of the relative effect of any injected compound on the permeability of the synovial membrane and thus its anti-arthritic qualities.

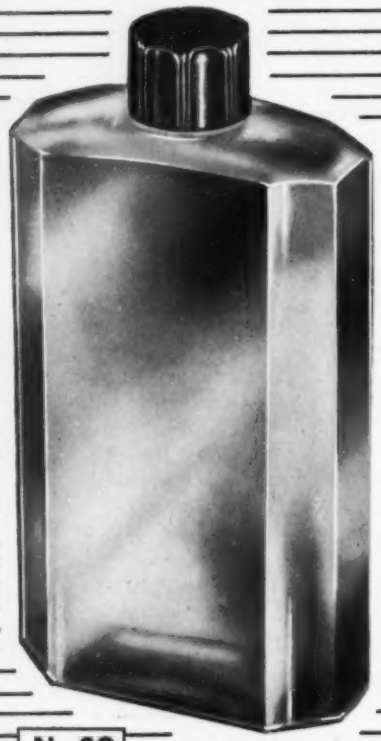
These findings explained in part the mechanism responsible for the beneficial effects of Cortisone in the treatment of rheumatoid arthritis. They also indicated that the protective steroid has a pharmacological rather than a physiological effect on the synovial membrane. Dr. Seifter wondered if other steroids, perhaps more readily available, might not produce the same desired effect. At about this time, some four month ago, the first lot of steroid compounds were sent from Mexico by Syntex to the Wyeth Institute in Philadelphia. One by one the steroids were put through the rabbit synovial membrane screen by Dr. Seifter and his staff. At that time, two were found to be active in decreasing the permeability of the synovial membrane. One of these, now known as Artisone, readily proved to have the greatest anti-arthritic effect.

Three weeks after the steroids arrived at the Wyeth Institute, Artisone was being tested clinically at the Hahemann Hospital. In most cases, improvement was noted after the third day of injections. In another day or two, pain was reduced, motion began to improve, and tenderness diminished. In most cases, maximum improvement seemed to be obtained after from ten days to two weeks of therapy with a leveling off after that period. So far, after a maximum of ten weeks' treatment in some patients, all improvements had occurred without side effects or the slightest evidence of toxicity. The absence of side effect is important in the light of previous clinical experiences with Cortisone and ACTH.

While Artisone is in itself medically important, Dr. Seifter is quick to point out that its discovery and the method of discovery opens up a valuable new avenue of research in the field of steroids. It opens up the possibility of perhaps finding pinpoint specifics for use in the treatment of some of the other degenerative diseases of aging.

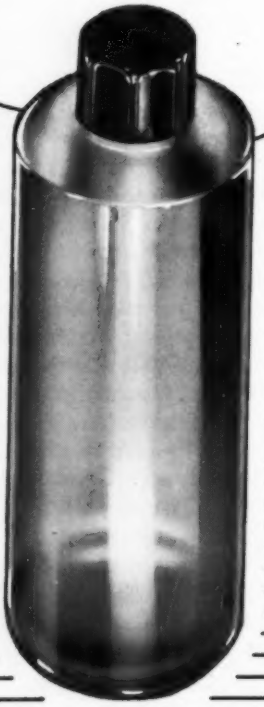
FOUR OUTSTANDING STOCK BOTTLES

available in all popular sizes



N-30

P-45



L-33

C-33

Here's the short cut to smart packaging—an artistically designed Swindell stock bottle plus your distinctive label.

Shown here are four of the many stock bottles available for quick delivery in popular sizes ranging from 1/8 ounce to 16 ounces.

SWINDELL BROS., BALTIMORE, MD.
40 WEST 40th ST., NEW YORK 18
ROBERTO ORTIZ, HAVANA, CUBA

When you think of bottles think of

Swindell

PACKAGING AND SELLING

TIME TO REPEAT

Last year when the cost of printed illustrations began to mount in a rather dizzy way, there was a great deal of discussion in some of the advertising journals about the possibility, or even the merit, of using advertisements that involved a substantial cost for production and which turned out to have above average appeal in repeated insertions. Now with still another increase in the cost of engraving announced, it would seem that the feasibility of using an advertisement more than once would get serious consideration and in fact be subjected to some detailed research.

The history of advertising has a number of case histories which illustrate in a rather startling way that certain advertisements under certain conditions can be repeated many times, and that in this repetition there is a beneficial accumulated effect. Our industry has a number of case histories, and conspicuous among these is the long record of repetition by Chanel of the simple, dignified picture of their bottle with an almost total absence of persuasive sales copy.

One of the most remarkable examples of repetition in advertising is the picture of the man with the violin which introduced Tabu Perfume. This advertisement first appeared in Beauty Fashion and because it was one of those pictures that so dramatically illustrates a main theme of the product, it brought about a considerable amount of talk and discussion in the trade. This same illustration was then adopted to consumer magazines and in the course of the next three or four years was repeated time after time in the several national magazines that carried Tabu advertising. Even when the advertising began to undergo definite changes, the general theme of this original illustration was retained so that it became recognized everywhere as almost a trade-mark for this particular perfume.

Still another example which provided an interesting study of the effectiveness of repeating an advertisement was that provided by Alexandra de Markoff during the first several years in which this company has been established. This was a small company at the time, operating through a limited number of selected department stores and at the time the advertising was limited to the one magazine, Beauty Fashion, which had been used in each consecutive issue over a period of several years with full black and white pages. This advertisement was a superb. photographic picture of the products, covering a bleed page and containing the single phrase, "Toilet Preparations Beyond Compare." No company name or address appeared on this advertisement and it was necessary to examine the bottle labels in the illustration to identify the product and the advertiser.

The original reason for repeating this single advertisement was a practical policy of amortizing a very considerable sum of money spent to secure this particular photograph. But as the advertising continued the owner of the company at that time was startled to discover that the company was gaining quite a reputation as a national advertiser, and many people who came to the office commented on this advertisement and stated that they had seen it in any one of a dozen class consumer magazines. In other words, the constant repetition of this very attractive advertisement in one publication built up in the minds of very many people an impression that they had seen it in several other magazines.

There is no authentic material resulting from research indicating the average number of people who will read any one issue of any one magazine, and particularly the average number of people who will notice, in a way that will leave some impression, any particular advertisement in that issue. This probably will never be known with any accuracy, because too many variables occur, variations resulting from the effectiveness of any one advertisement. But it is unquestionably true that even in the case of an extremely effective advertisement placed in an extremely effective and successful magazine that the average will fall substantially below 25 per cent.

For this reason, it would seem that when an advertiser develops an advertising page that tells his story in the simplest, most effective way and is illustrated in a manner that he feels is substantially superior to the general run of his advertisements and when, appearing in the magazine, he has some satisfaction that this advertisement is substantially above average, then it would seem sensible to repeat this advertisement several times. Certainly it would seem difficult to justify replacing an unusually attractive advertisement, just for the sake of automatically changing the advertisement, with a new issue of the magazine.

There has grown up a tradition in advertising that there must be a constant change of the advertisement with each issue of the magazine, no matter how much money is involved in the cost of producing these new advertisements. Advertising history has many times recorded an advertisement in a magazine which turned out to be a superior salesman and yet after a brief period this advertisement was dropped and others not nearly as effective, produced at great cost, had been used simply because the tribal habits of advertising insist that with each month we must discard the old and produce the new.

It is hoped that the extravagant cost of illustrating an advertisement will bring about some thoughtful discussion of the benefits of selected repetition in advertising and some research which will dig into this whole subject to discover whether it is more harmful or that it may be fully as effective as constant change and that under certain conditions it may have rather startling, extra benefits.

Buying Preferences

In the "Fourteen Market Comparison of Consumer Preferences," the Milwaukee Journal, in collaboration with other newspapers, has published a valuable book analyzing consumer buying preferences. This comparison covers 54 cities in 14 major markets.

The consumer panel or consumer analysis, established by the Milwaukee Journal over 25 years ago, has been adopted as the standard procedure by a considerable number of other newspapers. These panels have provided accurate and valuable data in many metropolitan markets for a number of years. In cases such as the Milwaukee Journal, where these panels have been conducted yearly over a considerable number of years, a valuable record of buying preferences in regard to the character of retail stores favored, in the ups and downs of brand preferences and in the growth and decline in consumer use of branded packaged products is shown.

In this particular book which lists the comparative markets for 14 major cities, one of the most interesting tables is a comparison of the place of purchase for cosmetics and toiletries and also for drug products. For instance, in Milwaukee 41.8 per cent of consumers prefer the department store, while in Salt Lake City only 23.47 per cent of the people in this area list the department store as their shopping preference. In Omaha 11.4 per cent of the people buy their cosmetics and toiletries in the variety store, and this preference reaches its highest point in Birmingham where 20.4 per cent of the purchases are in these five and ten stores. On the other hand, out of all the folks in Columbus, only 3.14 per cent trade in variety stores.

House-to-house salesman find Omaha, San Jose, Salt Lake City and the cities of the Illinois Daily Newspaper markets a fertile place for their house-to-house calls. In each of these cities over 10 per cent of the people state their preference for this type of buying.

On the other hand, the independent drug store maintains its dominant place for drug products, ranging from 73.5 per cent in Philadelphia to 52.79 per cent in Columbus. Very nearly 90 per cent of the drug products are bought from the independent druggist or chain drug store. The department store averages somewhat less than 10 per cent, the variety store somewhat less than 2 per cent and the grocery store, apparently an increasing factor in this market, as it is with toiletries, just appearing with a small degree of shopping preferences.

In tables showing per cent of use for various products there is an increasing variation in city markets. For instance, 50 per cent of Milwaukee women use permanent wave sets compared to 33.1 per cent in Birmingham. Sixty-six per cent of Salt Lake City men use a hair tonic or hair dressing; 41.7 per cent of the Columbus men are users of this product.

Some interesting speculations could arise from a study of the use of deodorants by men; 66.7 per cent in Birmingham use this product, while in Fresno, California, 39.9 per cent are regular users.

Below are selective tables as extracted from this analysis.

COSMETICS & TOILETRIES
Place of Purchase

Store	*Milwaukee*	*Omaha*	*Philadelphia*	*St. Paul*	*Columbus*
Dept.	41.8	26.3	17.2	43.8	39.61
Ind. Drug	27.1	34.7	48.2	23.9	19.02
Chain	17.	13.3	21.5	17.9	17.10
Variety	8.5	11.4	7.7	6.2	3.14
House-to-house	4.6	10.1		6.8	9.42
Grocery	.7	3.5	4.3	1.3	.70
Beauty parlor	.2			.1	

DRUG PRODUCTS
Place of Purchase

Store	*Milwaukee*	*Omaha*	*Philadelphia*	*St. Paul*	*Columbus*
Ind. Drug	66.1	71.1	73.5	58.3	52.79
Chain	26.1	19.	23.2	27.0	36.94
Dept.	7.1	6.	2.4	14.1	7.70
Variety	.6	2.2	.9	.6	2.50
Grocery					

SALES DEODORANTS (women)

Brand	*Milwaukee*	*Omaha*	*Philadelphia*	*St. Paul*	*Columbus*
Mum	21.5	19.7		19.7	22.1
Arrid	18.6	20.0		19.8	21.8
Fresh	11.6	6.7		8.7	6.1
Veto	8.6	9.4		5.4	5.2
Odo-Ro-No	6.	4.4		5.3	3.6
Avon	3.1	10.		7.4	8.6

FACE CREAMS

Brand					
Ponds	23.7	21.5	40.0	23.5	14.4
Lady Esther	19.0	12.8	14.2	12.8	8.4
Woodbury	8.7	13.0	7.6	8.3	13.8
Max Factor	4.1	2.7	3.3	3.	5.9
Avon	3.5	12.8	3.2	8.8	9.6

LIQUID SHAMPOO

Brand					
Halo	22.4	37.8		19.7	
Drene	20.1	23.5		14.9	
Fitch	10.0	14.3		11.4	
Watkins	5.9	5.6		4.1	

Racing for the Goal

Advertising Age recently reported the interesting sequence of events which took place in the Bristol-Myers Company which made a rush entry into the antihistamine field.

This company developed Resistab from formula to retail store in 29 days, thereby setting a new company record for speed in preparing a drug product for the market. The previous record of Bristol-Myers for quick action in getting a product to the market was in Bufferin, which appeared on the retail counters after a three months preparation period.

Bristol-Myers stated that the product was started on October 20 when a contract was signed with the Pyridium Co. for large amounts of thonzylamine. The

company then obtained approval from Federal authorities and proceeded as follows:

Between October 23 and October 25 an advertising agency was selected, a budget developed, the product named and the packaging decided on. The advertising agency, Kenyon & Eckhardt, was given the largest budget for a new product in the history of Bristol-Myers. About 1,800 was the number of suggestions submitted for a product name. Early choices included Bristamin and Contrahist.

An early decision to put up Resistab in bottles of 12 tablets was ruled out because of the difficulty of using small labels. Resistab 12's were put in sealed cellophane tape packages by Ivers-Lee. Owens-Illinois Glass Co. made delivery of 700,000 bottles for the 36-tablet size in less than two weeks. Boxes and shipping cartons were furnished by the National Folding Box Co. during this same period.

From October 26 to November 15 the company concentrated on production and accumulating inventories. By November 18 two folders of Resistab on a counter card went out to 38,000 retail druggists, 80,000 physicians and 54,000 dentists in 23 midwestern and eastern states and parts of Canada. With this 29-day cycle completed, including initial delivery, Bristol - Myers advertising broke on November 28.

Penny Pinching

Our Attorney General has just won an epic battle in his fight against monopolistic business practices, particularly in the field of price discrimination. A Grand Jury of 10 women and six men recently supported the Government's contention that five leading Philadelphia department stores had been conconspiring to eliminate price differences and in this way to deny the public the sweet fruits of competition.

This decisive case revolved around an agreement of department stores to hold their competition within certain basic limits of penny prices. For instance, when an article was to be sold for less than a dollar, it could not be sold at a price between 90 cents and 97 cents. When it was to be sold for more than a dollar, but less then $10.00, all price endings between 86 cents and 97 cents were to be eliminated. If the price were over $10.00, price endings between 50 cents and 94 cents were eliminated.

It was the contention of the government, and apparently the customers on the jury agreed, that the tendency of this arrangement was to raise rather than reduce prices. Unfortunately, these department stores did not have statistics to deny this contention, or perhaps the realization that they were entering a period of bitter retail competition which would revolve around prices more than anything else made them feel that this agreement, which may have made bookkeeping a little bit easier, and more importantly may have been used with the deliberate intent of stabilizing certain false illusions in the public mind, had ceased to be useful.

Some time ago we made the comment that no matter what extremes of inflation hit this country, the penny would always be a very vital coin. We cited the record of department store newspaper advertising to show that the odd price figure ending in pennies was one of the most important sales devices of the retailer and stimulated a buying impulse all out of proportion the amount of money saved. We also cited a strange fact that is intimately familiar to every retailer, and which probably would have been developed as evidence at this trial if the stores had thought it worth while, that there are certain psychological penny endings which create urgent buying impulses, and that between these psychological price figures there are areas which are barren, lack the ability to stimulate buying and seem to have a negative effect upon the customer.

Now that Attorney General, J. Howard McGrath, has won this momentous victory over business, let us hope he will be content to rest on his laurels for a little while.

More Work for Salesmen

There seems to be unanimous opinion among sales executives that salesmen are going to work a great deal harder this year and from now on. Not only are salesmen going to work harder, but in a large majority of cases they will have more products to sell and an altogether new and tough problem in trying to secure the retailer's attention and cooperation in a wide line of products.

There has been a distinct trend among many large companies, such as Lambert, Vick and Hudnut, to combine the operations under one sales force of products or divisions that formerly had a separate entity, so far as marketing is concerned, and a separate speciality sales force. In a considerable number of companies of this sort, one salesman will be responsible in his territory for two or more unrelated lines owned by the same central company, but up until recently marketed through independent divisions.

A number one problem for many small companies, particularly those whose volume falls below half a million dollars a year, has been the inability of the salesman to operate on a commission and earn a sufficient remuneration to prove practical to him and also to pay for travelling expenses and entertainment. Most of these companies have been faced with the alternative of employing second rate salesmen, who would be satisfied with low remuneration and travel cheaply and for that reason probably see their sales decline, or to work out cooperative agreements with one or more non-competing manufacturers, or to discontinue their own sales force and try to build up sales representation through independent side line salesmen who have already accumulated sufficient accounts to pay for intensive coverage of any given territory.

There has been a great demand for side-line salesmen, for this reason, and many manufacturers are having extreme difficulty lining up men over the entire country who would be available because their current lines do not contain a competitive product.

It is probable that there will be a great deal more intensive reading of the book, "Increasing Wholesale Drug Salesmen's Effectiveness," which was published a few years ago by the Bureau of Business Research, College of Commerce, Ohio State University, in cooperation with the N.W.D.A. This is a detailed study of the way in which wholesalers' salesmen spend their time in a retail store.

The factory, as perhaps is natural, has been far ahead of the sales force in making time studies of a more effective use of human energy. As they have found in production, it is all very well to ask people to work harder, but the mere fact that they do work harder does not mean that they are working more efficiently or more productively. The objective that will be most needed during this period of returning competition and more effective selling is certainly the more effective use of a salesman's time in routing and while in the retail store. If manufacturers are going to insist, which seems likely, that the salesman's time must be spent over a wider range of products, each one clamoring for display and cooperative retail treatment, then a great deal more heavy thinking is going to be required in the head sales office and a whole new conception of salesmen's training will probably have to develop.

---when insects bite----

... Rowles Mentho-Sulphur gives quick relief. This salve, in its handy jar, is just the thing for fishermen, hunters and campers.*

*Manufactured by Whitehall Pharmacal Company, New York, New York

Crown Lug Caps, like all Crown Closures, bring effective relief to sealing problems of manufacturers and packers. These caps give dependable sealing protection. The "down pull" sealing action is uniform and evenly distributed. As in all Crown Closures, the liner materials used in Crown Lug Caps have been carefully selected to give maximum efficiency with specific products.

When choosing closures and liners for your product, be sure you select the ones that are scientifically correct. It will be to your advantage to investigate the merits of Crown Closures. Crown Cork & Seal Co., Baltimore 3, Md. *World's Largest Makers of Metal Closures.*

CROWN CLOSURES

Approved by millions of housewives

The Road to Better Selling

Just about the most important problem facing marketers of packaged products during the coming year is finding ways to use more effectively point-of-sale material. We hear that some useful material to help in this way will soon be available. The Point-of-Purchase Advertising Institute and the Display Stearing Committee of the Association of National Advertisers are meeting now to discuss results of an experimental study just completed by the P.O.P.A.I., to determine means for a national study to establish yardsticks to measure the effectiveness of point-of-sale material.

The two basic factors of selling packaged merchandise are availability, that is proper distribution of the product in retail stores, and visibility, that is active vital existence within the store. There can't be too much argument on the basis that marketers in the past have given too much thought to availability and too little thought to visibility.

Obviously a product must have distribution in order to sell. And also obviously the first energy and effort of the sales manager, advertising manager and salesmen must be to secure this distribution which makes the product easily available to every likely consumer.

But too often the attitude of marketers has been to figure that the primary or sole function of the sales department has been to secure availability and then it was up to the advertising department to pull the products off the retail shelves, irrespective of the attitude of the retailer, the education of the retailer or the degree of preference which the retailer extended to those products. But in the last year or so there has been a decided revolution in this kind of thinking, and there is little question in our mind that the function of advertising will undergo some change.

This doesn't mean that the ability of advertising to produce business will in any way be lessened. It does mean that there will be distinct limitations placed upon the ability of advertising to accomplish certain things, notably to force a consumer to walk into a store and demand a product whether the retailer wants to sell it or not. At the same time this new thinking may enlarge the value of advertising because nothing can be more obvious than the plain statement that a willing, enthusiastic and cooperative retailer can very substantially increase the productive results from advertising.

There will have to be a great deal of new training of salesmen and perhaps a new conception of salesmanship. Very definitely the job of a salesman will really start after he has arranged to make his company's products accessible in a store. The star salesman of the future will be a master in procuring favorable acceptance of his company's display material and effective use of this display. In his own little sphere he will be a brigadier-general.

His field of operation will be the store window, the store counter, any other space available for display, and particularly and with increasing emphasis, the enthusiasm, education and morale building of the packaged merchandiser's private soldier in the front line trench, the clerk behind the counter.

Department of Commerce Monthly Retail Trade Report

Retail sales of all kinds in drug and department stores showing sales for the month of November 1949 as compared with the same period on 1948.

	Department Stores	*Drug Stores*		*Department Stores*	*Drug Stores*
Atlanta	−2	+1	Minneapolis	−4	+7
Baltimore	−1	−4	Milwaukee	−8	+5
Birmingham	−12	+3	Newark	0	−3
Boston	+4	+5	New York	−2	−3
Chicago	−7	−10	Philadelphia	+2	0
Cincinnati	−7	−3	Pittsburgh	−13	0
Cleveland	−7	−8	Providence	+1	−1
Dallas	−5	+13	St. Louis	−7	−5
Detroit	−8	−6	San Francisco	−2	−9
Los Angeles	−14	−7	Seattle	−5	−1

Drug and Cosmetic Sales in Super-Markets

The editor of "Super-Markets Merchandising" finds in a recent survey that this retail industry rolled up a sales record of eight and one-half billion dollars in 1949. This compares with 7.7 billion dollars in 1948, and is almost double the four and one-half billion dollar volume transacted in 1945, the closing year of the war. In addition, super-markets last year transacted more than one-third, that is 35.2 per cent of the country's total grocery, and combination meat and grocery store sales, a percentage which has reflected continual growth over the years.

According to this survey, 72.5 per cent of the stores have installed drug and cosmetic departments. This is a growth that has counted for zooming sales for certain manufacturers of household remedies and utility toilet preparations in a way that has carried them through the recent post-war readjustment of this industry with flying colors. Just a little while ago it was reported that one of the largest manufacturers of a utility toiletry received the largest, single order in its history from a large super-market chain. This substantial order forced this company to squarely face the issue of the super-market.

The report is that this company recently had no idea that their product was in super-market stores, since up until this time they had not contacted stores of this sort and had not been selling them. A survey, however, showed that their product was on open display in over one-third of the super-markets, and, strange as it may seem, these retailers had been buying the product from wholesaler druggists, although no one in this company had the least idea or had even entertained suspicion that this transformation was taking place.

We have seen some rather startling figures of drug and toilet sales in super-market stores. Contrary to previous evolutionary changes of this sort in retailing, notably the rise of the syndicate stores and the chains in retailing products of this industry, there seems to have been no particular explosion nationally from the retail druggist.

The retail druggists have experienced just about a 100 per cent increase in business since before the war and have seen their number slightly decline rather than expand to profit by all this new retail buying. Probably because business is still so satisfactory for the druggist and also because pharmaceutical research has each year brought such a big bonanza in his store that he has seen very little reason for agitation, no matter what happens. Perhaps this condition will continue because there is certainly an acceleration in research, and it would be safe to predict that the retail druggist will profit by many new medicinal products in the near future.

It would not at all be unreasonable to say that the raiding by the super-market on the products of the retail drug store is accepted so quietly because research has given the druggist something infinitely better.

New Products and New Packages

ABBOTT LABORATORIES' Thenylene and Desoxyn Tablets combine methapyrilene, an antihistaminic, and metamphetamine, a cerebral stimulant, and are indicated for patients who become drowsy after taking antihistaminics.

Abbott's Crystalline Penicillin G Procaine in Aqueous Suspension, 300,000 units, in B-D* 1-cc. cartridge with B-D disposable cartridge syringe (*T.M. Reg. Becton, Dickinson & Co.) offers the advantage of slow release and absorption of penicillin. It may be stored at room temperature.

Another recent Abbott development is Penicillin Potassium Ointment, Veterinary, 100,000 units, prepared for udder instillation in the treatment of acute or chronic mastitis due to Streptococcus agalactiae.

BIO-RAMO DRUG CO., INC., announces the availability of oral B-12 as Rametin Tablets, each tablet containing 5 micrograms. These tablets are not the concentrate, but the pure crystalline material.

BURROUGHS WELLCOME & CO. has released a new type antihistaminic known as Perazil brand Chlorcyclizine Hydrochloride, differing chemically from other antihistaminics on the market, being a piperazine rather than a conventional ethylenediamine compound.

CHEN YU, INC. presents Mani-Kit, the new Chen Yu price promotion package. The red-green-and-black box contains nail lacquer, available in Chinese Red, Lucky Devil, Temple Fire or Flowering Plum, plus bottles of cuticle remover and lacquer remover. Emery boards and orange wood stick are included.

CIBA PHARMACEUTICAL PRODUCTS, INC., introduces a pocket-sized nebulizer which applies Pyribenzamine in an aqueous nasal solution directly to the nasal membrane. Designed by Bakelite and made of Bakelite polyethylene, the nebulizer distributes a mist of Pyribenzamine throughout the nasal passage. It may be procured without prescription.

COTY has prepared a Finger Blend Palette of eye-tint, rouge-tint and pastel-tint, which is given with a box of Air-Spun face powder for the price of the powder alone. There is also a special package of face powder, Finger Blend Palette, and a creamy lipstick.

LEDERLE LABORATORIES announces the development of RH Factor Typing Sera, two forms of which are now being marketed. Both forms, Anti-Rh_0 (Anti-D) 85 per cent Serum Lederle, and Anti-Rh_0 (Anti-C + D) 87 per cent Serum Lederle, are accurately standardized and may be used with oxalated blood, fresh blood or clotted blood.

McNEIL LABORATORIES, INC., introduced Corenil, a new product used for the symptomatic relief of coryza and allergic rhinitis. Each tablet contains: methapyrilene hydrochloride (N.N.R.) 25 mg., extract belladonna 7.5 mg., and racemic desoxyephedrine hydrochloride 1.25 mg.

ORGANON has changed the name of its brand of methyl thiouracil from Antibason to Muracil. This change has been made to conform with the nomenclature of the Council on Pharmacy and Chemistry of the American Medical Association which body has just accepted Muracil as the first brand of methyl thiouracil. For a period of several months package labels for this product will bear both the former name and the new name.

PACKER'S TAR SOAP, INC., is introducing a new deodorant, Packer's Charm Soap, which eliminates body odors without stopping the natural perspiration. This new product is distributed in an attractive package featuring a simple motif of a camelia-like flower with green leaves against a peach background.

PARKE, DAVIS & COMPANY has developed two new products: Pamisyl Tablets (para-aminosalicylic acid) indicated for treatment of tuberculosis, and Rucon Kapseals R, which combine rutin, vitamin C and dicalcium phosphate anhydrous, and which are designed to aid in the correcting of increased capillary fragility and permeability often associated with hypertension, thiocyanate therapy, drug sensitivity, diabetes, pulmonary hemorrhage, retinal hemorrhage and ascorbic acid deficiency.

SCHENLEY LABORATORIES, INC., introduces PAS (para-aminosalicylic acid) Schenley for use along or in conjunction with streptomycin or dihydrostreptomycin in the treatment of certain types of tuberculosis. Schenley also announces the release of Avosyl Tablets (Schenley brand of 3-orthotoloxyl-1, 2-propanediol). Known abroad as Myanesin, Avosyl is a muscle relaxant, recommended for use as an aid in the management of diseases associated with neuromuscular involvements. The Schenley Powder Insufflator, another recent Schenley development, is a device designed for the application of any powdered drug such as penicillin, streptomycin, silver picrate, etc., in measured doses into any body cavity or skin lesion without wastage.

SHARP & DOHME announces the release of new laboratory reagents for use in the preparation of Rh blood grouping sera. Specific Polysaccharides Blood Group A and Blood Group B (Reagents) are concentrated, sterile solutions of complex polysaccharides that neutralize the anti-A and anti-B agglutinins in Rh blood grouping sera. These new reagents perform this action without affecting the stability of anti-Rh sera or the activity of the anti-Rh agglutinin.

STERLING-WINTHROP RESEARCH INSTITUTE has developed a new potent amebacidal drug which will be introduced under the name Milibis. Designed for oral administration, Milibis is exceedingly effective and virtually without the toxicity usually associated with amebacides.

STRONG COBB & CO., INC., announce the introduction of a new Ampin emergency assortment kit developed to meet considerable demand from practicing physicians. The pocket-sized kit contains 2 Ampins Epinephrine Hydrochloride, 1:1000, ½ cc.; 1 Ampin epinephrine hydrochloride, 1:1000. 1 cc.; 1 Ampin ephedrine sulfate, 50 mg., (¾ gr.) 1 cc.; 1 Ampin caffiene sodium benzoate, 7½ gr., 1-½ cc.; 1 Ampin nikethamide, 25 per cent, 1½ cc.; 1 applicator vial tr. bromathyl (topical germidice). Space is also provided for five additional Ampins.

SUN TUBE CORPORATION is marketing a new aerosol container, styled for the pharmaceutical and cosmetic trades. These containers will be sold complete, with an assembled valve

(Continued on page 201)

#1

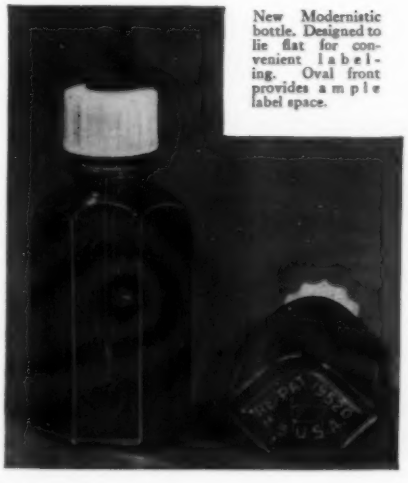
Non-rolling, extra-depth, Bakelite cap; thick-flange rubber bulb; Saftee-ball glass.

#3

Regular plastic cap; thin flange rubber bulb; semi-blunt glass.

#4

Metal cap; oil-resistant Amekine synthetic rubber bulb (without strong odor); blunt glass.



New Modernistic bottle. Designed to lie flat for convenient labeling. Oval front provides ample label space.

New Perfection

DROPPING PARTS

Simplify Your Packaging Problem

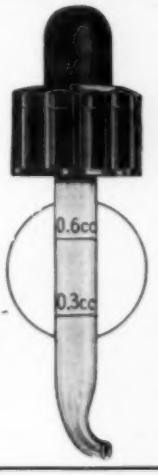
The wide variety of sizes, styles and colors in New Perfection's complete line of dropping parts offers the answer to your packaging problem. Each component part is designed to present and administer your product in the most attractive, convenient manner. We supply dropping parts to fit your bottles or furnish the complete unit.

DROPPER GLASSES CAN BE CALIBRATED IN COLOR

An inexpensive extra that adds great convenience to the use of your preparation. The dosage you desire in the color you specify is accurately and permanently printed on the dropper glass. Trade-marks and firm names can also be imprinted.

#2

Non-rolling, extra-depth Bakelite cap; thick-flange rubber bulb; special bent glass, plain or CALIBRATED.



RUBBER BULBS are supplied in many styles and colors. Oil-resisting **AMEKINE** synthetic rubber is used for oil preparations; natural rubber is supplied for other products.

CAPS of plastic or metal can be furnished in a complete range of sizes and colors.

DROPPER GLASSES are available in a wide variety of styles and sizes; plain or CALIBRATED in any color to mark specific dosages.

BOTTLES in an attractive modernistic style in Amber, Blue, Green or Clear glass are available, with dropping parts, in the following sizes: 2 cc, ¼, ¼, ½, 1 and 2 oz.

Write for Samples and Quotations

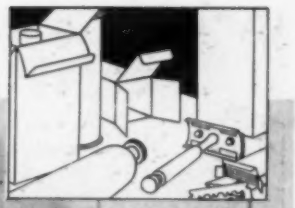
PENNSYLVANIA GLASS PRODUCTS CO. INC.

"Glass Goods of the Better Kind"

430 N. CRAIG ST. • PITTSBURGH (13), PA., U.S.A.

For a touch of packaging excellence
many prominent manufacturers specify
Carr-Lowrey opal jars.
CARR-LOWREY
GLASS CO.
Factory and Main Office: BALTIMORE 3, MD. • New York Office: 40 W. FORTIETH ST. • Chicago Office: MERCHANDISE MART

In Men's Toiletries, For Instance



THE CLAY-COATED BOX BOARD THAT'S CUSTOM-MADE FOR EVERY ORDER

Color-True, Smooth-Surfaced Ridgelo Makes the Most of Good Package Design

Good packaging is a prime secret of success in myriad fields, and men's toiletries are notable among them! That's why leading manufacturers of shaving lotions, talc, razor blades and other men's toilet articles, depend on Ridgelo to enhance the eye-appeal of their products.

Ridgelo can do a sell-on-sight job for *you*, too! Each order is custom-made, right down to the smallest detail. Ridgelo cartons *exactly* conform to your printing and filling requirements . . . *exactly* suit your individual needs.

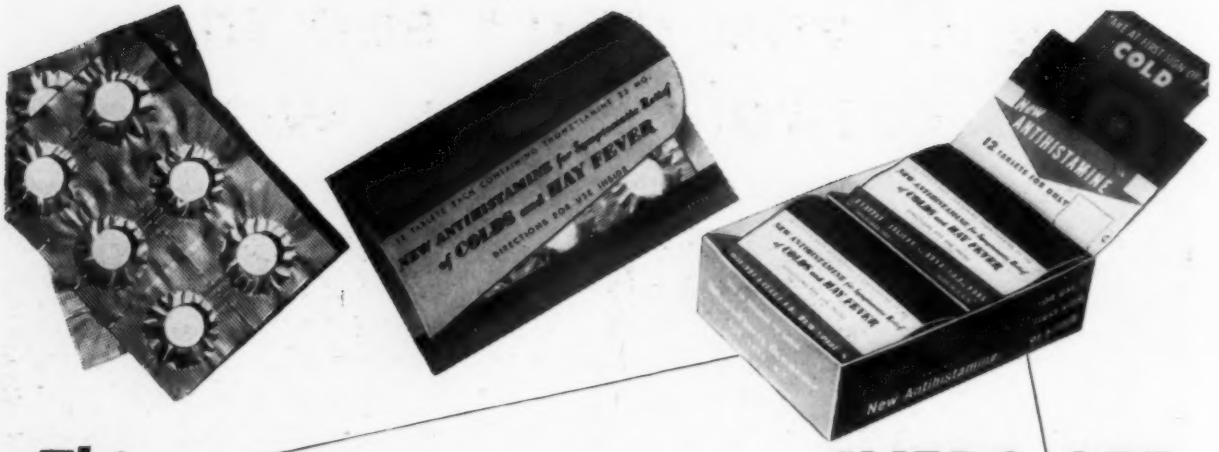
Ridgelo's precision control system assures you of continued carton quality, in year-after-year repeat orders. Insoluble, light-resistant, *integrated* pigments are matched to color samples with scientific accuracy. A wide variety of special finishes, including several *exclusive* with Ridgelo, are available for special problems.

Getting the most for your money . . . that's being economical in the *true* sense! Choose Ridgelo and you get packaging perfection at the lowest cost compatible with fine quality standards.

MADE AT RIDGEFIELD, N. J.
BY LOWE PAPER COMPANY

REPRESENTATIVES

H. B. Royce, Detroit • Philip Rudolph & Sons, Inc., Philadelphia
A. E. Kellogg, St. Louis • Norman A. Buist, Los Angeles



This is packaging service at IVERS-LEE

Mr. L. I. Volckening,
Ivers-Lee Incorporated,
215 Central Avenue,
Newark, New Jersey.

Dear Mr. Volckening:-

I think we have made a new record in putting a new product on the market. From the day of the first decision to market the product, until the first sales package was ready for delivery, was exactly thirty days! This could not possibly have been accomplished without the wonderful cooperation and assistance of the men in your company. I would like to say this to each one personally, but since I am unable to do that, I ask you to extend the same thanks to them.

What We Did—Within 10 days after this packaging problem was brought to us, we were in production, and within 10 days more we were shipping to the customer — over 2½ million tablets per day (a) in Sanitape-Sealtite (b) in a special, laminated, transparent, moisture-proof material (c) in catch-covers of 12 tablets each (d) in counter-displays of 12 catch-covers each packed in shipper's containers — the product completely packed ready for national distribution.

How We Did It—Actually, as a matter of routine, for we are the world's largest unit-packagers of pills, tablets, capsules, triturates, creams and powders — with a single plant capacity of 10 million units in one shift — and production which can be rapidly expanded to 30 million units per day without additional equipment.

To You —This means that we make available to customers, both large and small, facilities which get their product into national distribution in the shortest possible time — a vital factor in these days of intense competition. It means that our customers have at their service, the finest packaging plant in the world — without investing a dollar of their own in plant or equipment.

Sanitape-Sealtite is a unique method of packaging pills, tablets, capsules, creams and powders, by which each unit or unit dose is sealed in its own airtight compartment surrounded by a crimp flange assuring complete protection and maintained efficacy. Packages, machines and methods covered by U. S. and foreign patents and patents pending. Available only through the Ivers-Lee Packaging Service. Infringing imitators will be subject to legal prosecution.

SANITAPE SEALTITE
THE SEAL OF PACKAGING PERFECTION

IVERS-LEE COMPANY, NEWARK, N. J.

If you don't see the container you want...

Here at Continental we make selling containers for some of the best names in the proprietary and toiletries fields. We have a big family of these containers, and it's constantly growing.

For example, we make hinge-cover boxes in a wide variety of sizes, round friction plug cans for miscellaneous household products, sifter top cans in round, oblong and oval shapes for all kinds of powders, as well as a wide assortment of round lock top cans — some with and some without inner seal that are excellently adaptable to many dry products.

We can fit a Continental can to your product. And you'll be delighted by the way our sparkling lithography puts your product's best foot forward. All along the line, you'll find Continental people eager to please you — and we're ready to begin today.

You can't beat Continental as a dependable source of supply!

CONTINENTAL CAN COMPANY

100 East 42nd Street New York 17, New York

"COLD" time...

is drug time...and time to order

● ***The inevitable*** epidemics of winter colds are upon us, but this year cold-sufferers can look forward to more than symptomatic relief.

Immediate increased supplies of Caffeine and Acetophenetidin are available for formulation with the antihistamine drugs now being marketed to abort "colds." Considerable medical experience has indicated that practically all antihistaminics cause drowsiness to some degree. The inclusion of Caffeine is expected to alleviate this undesirable side-effect and Acetophenetidin's effective analgesic action can be counted on to relieve distressing "cold" symptoms.

Caffeine, Phenacetin, Citric Acid and Sodium Citrate comprise an important part of many well-known formulations. Pfizer makes these products in the U.S.P. grade and our reliable "Quality Control" assures you that these fine chemicals live up to Pfizer standards of purity and uniformity.

Pfizer Caffeine Alkaloid Anhydrous U.S.P. is available in 5, 25 and 100 pound drums; Pfizer Acetophenetidin U.S.P. (Phenacetin) is available in 5, 25, 100 and 200 pound drums; Citric Acid U.S.P. in 25, 50, 100 and 220 pound drums and Sodium Citrate U.S.P. in 25, 50, 100 and 250 pound drums. Write today for prices to: Chas. Pfizer & Co., Inc., 630 Flushing Avenue, Brooklyn 6, N.Y.; 425 North Michigan Avenue, Chicago 11, Ill.; 605 Third Street, San Francisco 7, Calif.

PFIZER QUALITY

PFIZER

Manufacturing Chemists Since 1849

NEWS...

Remensnyder Named Heyden Pres.

John Paul Remensynder was elected president of Heyden Chemical Corporation last month to succeed Bernard R. Armour, who died in early December. Mr. Remensynder has been associated with the company since 1920 and was elected a director and vice-president of the firm in 1944. Mr. Remensnyder is a governor of the Synthetic Organic Chemical Manufacturers Association and the treasurer and a governor of the Drug & Chemical Club.

JOHN PAUL REMENSNYDER

The board of directors also decided to continue the management committee, formed on December 9, following the death of Mr. Armour. The membership includes Mr. Remensnyder, R. Lulek and S. Askin, both vice-presidents and directors of the company, and P. van der Strickt, secretary and a director.

Robins Donates $30,000 to Hospital

The A. H. Robins Company, Inc., and the Robins family, contributed $30,000 for the establishment of a pharmacy in the proposed Memorial Hospital at Richmond, Virginia. The gift was disclosed by E. Claiborne Robins, president of the company, and was presented in memory of Mr. Robin's father, who had served as the company's first president until death in 1912. The elder Claiborne Robins, a native of Richmond, was a graduate of the University of Richmond and the Medical College of Virginia's School of Pharmacy.

Sandoz Appointments

Joe Harris has been appointed eastern regional manager of Sandoz Pharmaceuticals and will supervise the company's activities in the seventeen states comprising the New England and Middle Atlantic regions and Virginia.

Nine additional appointments have been made known by Harry Davis, manager of the professional service department of Sandoz, including John Hobbs, George Broom, Jim Murphy, and Nicholas Pappas who have been assigned to areas in New York State; Bill Burke, Peoria, Ill.; Page Yarbrough, North Carolina; Jim Bartz, Chicago; Art Hontz, southern Pennsylvania; and Ed Heine, Newark, N. J. Stanley Halley was promoted to assistant production manager.

JOE HARRIS

Chicago Chapter, Cosmetic Soc.

Newly elected officers of the Chicago Chapter of the Society of Cosmetic Chemists for 1950 are Dr. Joseph Schultz, Lady Esther, Ltd., chairman; Dr. Katherine Graham, Sears Roebuck & Co., secretary; W. E. Lieb, Allen B. Wrisley Co., treasurer; and Dr. H. Heinrich, Kolmar Labs., Inc., vice-president.

Yardley Appoints Pullen

Fred J. Pullen, Jr., has been appointed advertising manager for Yardley of London, Inc.

Becomes Organon President

Dr. Gregory Stragnell, formerly executive vice-president and general manager, has been named president of Organon Inc. Dr. Stragnell states that Organon will expand its services to the medical and pharmaceutical professions, not only through the introduction of new ethical pharmaceutical products, but also through research on new therapeutic agents like ACTH and Compound E.

Nay Heads Drug & Chem. Ass'n

Walter R. Nay, Chicago regional sales manager of Mallinckrodt Chemical Works, has been elected president of the Chicago Drug & Chemical Association. Additional officers just elected to serve with Mr. Nay for the 1950 term include Ralph Olson of S. B. Penick & Co. as vice-president; Mel Thompson, Wyandotte Chemicals Corp., treasurer; and William E. Phillips, Wm. E. Phillips, Inc., as treasurer.

WALTER R. NAY

MRT Expands Facilities

Marvin R. Thompson, Inc., has acquired additional production facilities in Stamford, Connecticut, according to Dr. Thompson, director of research, because of new developments in the research division. The new products requiring the expansion in facilities include Lactol-MRT, a discovery in the field of gastro-intestinal diseases, and Sudosal-MRT, important in the fields of high blood pressure, heart, kidney and vascular diseases.

Malpass Heads Harvey Production

George N. Malpass was recently placed in complete charge of production at the G. F. Harvey Co., Saratoga Springs, N. Y., and will simultaneously retain his direction of research and control.

Pittenger Pres. Drug Exchange

Dr. Paul S. Pittenger, vice-president in charge of quality control, Sharp & Dohme, Inc., has been elected president of the Philadelphia Drug Exchange for 1950. Other new officers include George F. Applin, Mallinckrodt Chemical Works, as vice-president; J. Mervin Rosenberger, Smith, Kline & Franch Laboratories, secretary; and Harold C. Haberstadt, Shoemaker & Busch, treasurer.

District Managers Confer

Thirty-four district office managers, and plant, department and general managers of the Glass and Closure division of the Armstrong Cork Company attended a conference at the Company's general office in Lancaster, Pennsylvania in January. J. C. Feagley, vice-president and general manager; R.A. Horning, assistant general manager and production manager; and Roger H. Hetzel, general sales manager, Glass and Closure division, presided over the four-day conference. In addition to special meetings, the program included an address by H. W. Prentis, Jr., president, and an inspection tour of the E. I. Du Pont de Nemours & Company Cel-O-Seal operations at Wilmington, Delaware.

New Wyeth Div. Headquarters

A new Wyeth division sales headquarters and warehouse was officially opened last month at 5101-03 Lakeside Avenue, Cleveland, under the manage- of Don Wilson. F. V. D. Jones is the branch warehouse manager. The area served by the new warehouse will include all of Ohio and portions of New York, Pennsylvania and Michigan.

Names T. G. A. Committee

Karl Voss, of Karl Voss Corporation, and chairman of the convention commitee of the Toilet Goods Association, has named the following who will serve on his committee: A. R. Ludlow, Jr., U. S. Industrial Chemicals, Inc., as treasurer; Paul E. Forsman, C. H.Forsman Company; Philip E. Haebler, Goldschmidt Chemical Corp.; M. Lemmermeyer, Aromatic Products, Inc.; Walter S. Nuckols, Swindell Brothers, Inc.; Edward D. Russell, Am. Newspaper Publishers Ass'n; Lamson M. Scovill, Scovill Mfg. Co., J. W. Thayer, Owens-Illinois Glass Co.; and Kenneth W. Tracy, Fritzsche Brothers, Inc. The Convention will be held May 16, 17 and 18 at the Waldorf-Astoria Hotel, New York.

Reardon with Roubechez

T. H. Reardon, formerly of Naugatuck Aromatics, joined Roubechez, Inc., in a sales capacity early in January. Roubechez further announces that it purchased the patent rights and good will of the R. W. Wilson Company, manufacturers of caps and closures.

Magnus Receives Trade Post

Joseph B. Magnus, vice-president of Magnus, Mabee & Reynard, Inc., has been elected a vice-chairman of the international Trade Section of the New York Board of Trade.

Appointed by J. T. Baker

Francis A. Wandell and Robert H. Meier have been appointed director of purchases and inventory control and purchasing agent, respectively, of the J. T. Baker Chemical Company.

Matchabelli Appointments

Owen Stoner, vice-president in charge of advertising and promotion for Prince Matchabelli, Inc., has been named assistant general manager, according to H. Robert Marschalk, newly elected president and general manager. Also made known was the appointment of William Jeffery as sales manager, succeeding Paul W. Pearson who had resigned.

M. M. & R. Sales Conference

Magnus, Mabee & Reynard, Inc. held its annual sales conference during the first week of January at the Hotel Warwick, New York. Outstanding leaders in many industries delivered talks to the audience of sales representatives, technical experts and executives.

A display of over 943 products was set up as an indication to the ever-increasing number of uses for flavoring and perfuming materials. The theme of the convention, which was under the direction of Dr. Arthur H. Downey, technical director of Magnus, was "Making Your Know-How Sell." In commenting on the convention during his talk at the concluding session, Percy C. Magnus, president, stated that this conference had been the most illuminating annual sales meeting in the history of the company.

One of the high-lights of the dinner meeting held on the last day was the induction of John W. Felton, Jr., and Gordon Leech into the MM&R 20-Year Club. Mr. Felton is the division sales manager, southeastern district and assistant vice-president, while Mr. Leech is the sales representative for Pennsylvania and southern New Jersey.

Nineteenth sales and staff dinner of Magnus, Mabee, & Reynard, Inc., which was held at the Hotel Astor in early January and marked the closing of the four-day session. Those attending included sales representatives, technical experts, and executives of the company.

Starr Re-elected Secretary

Dr. Donald F. Starr, chief chemist of the insecticide division of S. B. Penick & Co., has been re-elected secretary of the insecticide section of the American Association of Economic Entomologists for the year 1950. Dr. Starr is also a member of the scientific committee of the Chemical Specialty Manufacturers Association, and has been elected vice chairman of the committee.

Conner with SKF

Dr. Robert T. Conner has joined Smith, Kline & French Laboratories as technical assistant to the director of the

DR. ROBERT T. CONNER

research laboratories, in which position he will work on the laboratory phases of development problems. Dr. Conner had previously been vice-president of research and development at the Harrower Laboratories.

Pneumatic Scale Makes Purchase

Pneumatic Scale Corporation, Ltd., of Quincy, Massachusetts, has purchased the full line of Carter-Vac vacuum filling machines formerly manufactured and sold through the mechanical division, General Mills Inc., Minneapolis. The equipment includes automatic rotary machines designed for production filling of free flowing and non-free flowing materials at speeds ranging up to 300 per minute and several single head manually fed units.

Monsanto Grants Harvard Award

Robert K. Mueller, production manager of the plastics division, Monsanto Chemical Company, and Alfred Loeffler, general manager of the New York branch office, have been awarded leaves of absence to attend the advanced management program at Harvard University Graduate School of Business Administration, according to William M. Rand, president.

Triest Heads Vanilla Ass'n

William Triest of Zink & Triest Company, Philadelphia, has been elected president of the Vanilla Bean Association of America. Other new officers include J. Schmidt of Dodge & Olcott, Inc., vice-president, and J. Manheimer, treasurer. New directors are Edward S. Buckley, Thurston & Braidich; A. H Hunziker, Hunziker, Inc., Chicago; and J. H. Maxwell, Camax Company, Philadelphia.

Dr. Kitchen on NYU Staff

Dr. D. K. Kitchen, medical director of Bristol Laboratories, has been ap-

DR. D. K. KITCHEN

pointed assistant clinical professor of dermatology and syphilology on the part-time staff of the College of Medicine of New York University. He remains as medical director of Bristol and vice-president of Bristol-Myers, the parent organization.

Norwich Plans Expansion

Norwich Pharmacal Co. has announced that construction of a new plant in Norwich, N. Y., will begin early in March. The structure will be used for making chemicals used in the preparation of drug products manufactured by Norwich and its wholly-owned subsidiary, Eaton Laboratories, Inc.

Funkey Becomes V.P. of Carr-Lowrey

The election of John H. Funkey to the position of vice-president and sales manager of the Carr-Lowrey Glass Company was recently announced. Mr. Funkey joined the organization in 1932 as a member of the sales staff.

Fleet Holds Sales Meeting

The C. B. Fleet Company held its annual sales meeting in December in the Virginian Hotel, Lynchburg, Virginia. In addition to an address by C. G. Baber, president, important papers were delivered by a number of special speakers, including Francis Record Whitehouse, M.D.; Harold Stratton, president, northern New Jersey branch of the American Pharmaceutical Association; and Dr. George E. Miller of the Buffalo School of Medicine and the Buffalo General Hospital.

Members of Fleet's Pioneer Club read several papers during the first day's business session. During the course of the conference O. B. Newton, Jr., sales manager, announced that Fleet has, for the first time in its history, four division representatives who will visit detail men of various territories four times a year.

Members of the Pioneer Club of C. B. Fleet Company, Inc., who attended the sales conference recently. Membership requires a minimum of twenty years' detailing for Fleet for each man. Left to right, standing: John Petersen, Glendale, Calif; J. Gordon Myers and William S. Holt, Chicago; A. R. Shelly, Cleveland; Stanley C. Smith, San Francisco; Charles D. Hawkins, Brooklyn; Cooper Ponton, Scarsdale, N. Y.; Paul Holzapfel, Kansas City; and Douglas Henderson, Philadelphia. Left to Right, seated: Fred T. Bergstrom, Los Angeles; William E. Avery, Atlanta; E. H. Turpin (president), Jackson Heights, N. Y.; and L. S. Matthews, Winston-Salem, N. C.

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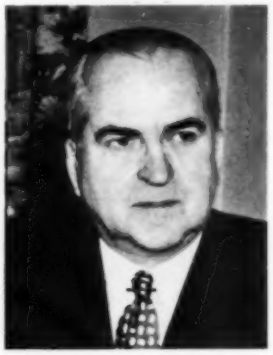
Distillers of Oil-Soluble Vitamins and Other Concentrates for Science and Industry; Manufacturers of High Vacuum Equipment

100 Years for Sheffield Tube

Having been founded in 1850 as a toothpaste business by Dr. W. W. Sheffield, a noted New England dentist and chemist, the Sheffield Tube Cor-

L. TRACY SHEFFIELD

poration is this year celebrating its 100th year. The original business was carried on by Dr. L. Tracy Sheffield, son of the founder. In 1892 he introduced toothpaste in tubes, the demand for toothpaste having increased to such an extent as to merit the manufacture of collapsible metal tubes for the Sheffield product.



W. KYLE SHEFFIELD

A distinct tube manufacturing plant was established at the turn of the century, and having since been greatly expanded, is now operating under the management of the third and fourth generations of the original family. The Sheffield Tube Corporation of 1950 manufactures tubes for toothpaste, cosmetics, toiletries, medicinals, pharmaceuticals, lubricants, liquid cements, and similar items.

Factory and home offices of the corporation are under the guidance of President L. T. Sheffield in New London, Conn. W. Kyle Sheffield, vice-president directs the New York sales and export, while the Chicago sales office is managed

THOMAS C. SHEFFIELD

by Charles Arch, and the West Coast Sales office in Los Angeles, by Vice-President Thomas C. Sheffield.

Richer Named Production V.P.

Archie S. Richer was elected vice-president in charge of production for Fine Organics, Inc. Ernest Segessemann, member of the board, remains vice-president and technical director of the company.

Director of Bio-Ramo Drug

Francis Ramo Cusumano, president of the Bio-Ramo Drug Co., Inc., has announced that John Charles Thomas, radio, concert, and opera artist, was elected a director of the company during a recent meeting of the board.

Elected Pres. of Perfumers Soc.

George J. Tombak, E. I. du Pont de Nemours & Co., was elected president of the American Society of Perfumers at a recent annual business meeting. Addi-

GEORGE J. TOMBAK

tional officers included Waldo Reis, van Ameringen-Haebler, Inc., as vice-president; William H. Barlow, Orbis Products Corporation, secretary; R. B. Houk, Dodge & Olcott, Inc., treasurer; and Jacques A. Masson, Ph. Chaleyer, Inc., as director for a three-year term.

To Distribute Plaxpak Bottle

The H. Smith Bottle Supply Company, Atlanta, has been appointed by Plax Corporation division, Hartford-Empire Company, to handle distribution of Plaxpak squeezable polyethylene bottle.

Branch and assistant branch managers of Bristol-Myers Company meeting with top sales executives at a recent New York meeting. Standing, left to right, Harry B. Rooney, western manager; Bruce W. Mansfield, assistant western manager: J. T. Wallace, midwestern manager; Robert O. Slaughter, assistant southern manager; Hayward C. Wheeler, southern manager; Marion J. Smith, southwestern assistant manager; Burton Riordan, southwestern manager; Irving J. Newfield, assistant New York manager; Landon W. Burbage, New York manager, and Rudolph R. Schirk, Assistant mid-western manager. Seated are J. W. Brooks, vice-president; Joseph P. Hardie, vice-president in charge of sales; and Vrooman H. Freer, assistant vice-president.

Private dinner party at the Waldorf in New York in January, given by Bourjois, Inc. in honor of Nelson W. Millard, former sales manager of the department store division, and Harry Barr, former sales representative in the Philadelphia-Baltimore-Washington area, both of whom have resigned. Seated around the table, left to right, are Grace Coppage, Harry Barr, Paul H. Douglas (president), Nelson W. Millard, Gladys Bliss, and George Plastow. Standing: F. W. Miller, John Douglas, C. L. Baker, H. Gregory Thomas, R. L. O'Brien, Normal F. Dahl, and W. E. Malone.

Flavor Convention Plans

Plans are progressing for the 41st annual convention of the Flavoring Extract Manufacturers' Association to be held from May 7 to 10 at the Traymore Hotel in Atlantic City, according to John N. Curlett, president. Dr. J. W. Sale, chief of the beverage branch, division of food, of the Food and Drug Administration and one of the major speakers, will address the convention on "Some Recent Administrative Opinions and Court Decisions under the Federal Food, Drug and Cosmetic Act, of Interest to Flavoring Extract Manufacturers."

Extract manufacturers who are not members of the association, and who wish to attend the convention, may contact Frank D. Nowland, chairman, membership committee, % George H. Nowland Co., 23 West Pearl Street, Cincinnati 2, Ohio. Those interested in advertising in the *Proceedings* of the convention may contact Louis J. Woolf, chairman, advertising committee, % H. Kohnstamm and Co., Inc., 83-93 Park Place, New York 7.

Johnson On Extensive Trip

Harry T. Johnson, general sales manager of Kathleen Mary Quinlan, departed in January on an extensive trip through the western states to visit the Quinlan accounts.

Board Member of Trust Co.

Lawrence D. Barney, president of Hoffmann-La Roche, Inc., was elected to the board of Montclair Trust Co., Montclair, N. J., in late January.

Vermeulen V.P. of Bristol Labs.

Albert Vermeulen, manager of the export division of Bristol Laboratories,

ALBERT VERMEULEN

Inc., was elected vice-president of the company at a meeting of the board of directors, according to Frederic H. Schwartz, president.

Addresses Chem. Development Ass'n

James Day, manager of the pharmaceutical sales department, the Dow Chemical Company, presented a talk on "Unique Problems of Commercial Chemical Development for Pharmaceutical Consumption" before the Commercial Chemical Development Association in January. He discussed the problems encountered by the chemical supplier in the development of new chemicals for the pharmaceutical manufacturing trade, and how these problems can be coordinated between the chemical supplier and the pharmaceutical manufacturer.

Luckman Resigns From Lever

Charles Luckman resigned his post as president of Lever Brothers Company last month simultaneous with the visit to this country of Sir Geoffrey Heyworth and Paul Rykens, chairmen of the British and Dutch parent companies respectively.

In a formal statement on behalf of the board of directors of the parent companies, the chairman attributed the resignation to "a disagreement as to the future policy of the American company that we were unable to resolve."

Plans will be carried through on the construction of the new Lever House building at 53rd and Park Avenue and work is expected to start in the early spring. No successor has been chosen to the Lever presidency, and until the position is filled, the executive responsibility will be handled by three directors of Unilever, Arthur Hartog, L. J. Heyworth and F. D. Morrell.

Bouton with Synfleur

John A. Bouton was made head of the flavor department of Synfleur Scientific Laboratories, Inc. on February first, according to Luis de Hoyos, president.

J. A. BOUTON

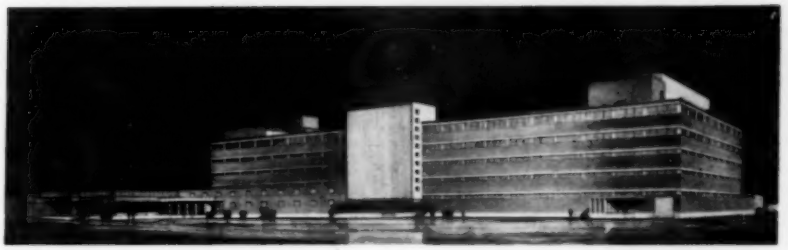
Formerly president of South Laboratories, Inc., Greensboro, N. C., he also worked in the flavor departments of Dodge & Olcott (12 years) and S. B. Penick & Co. (3 years), and has written a number of articles on the subject of flavoring.

Oswald Technical Director

Dr. Victor J. Oswald has been appointed technical director of the Canadian subsidiary of Firmenich & Co., Carameed, Ltd., Toronto, according to Charles C. Bryan, resident partner of the parent company. Dr. Oswald was until recently associated with Stafford Industries, Ltd.

Addition to Abbott Labs.

Construction of a $1,800,000-addition to one of its large manufacturing buildings was begun by Abbott Laboratories in December. It will be used principally for a warehouse and for making bulk intravenous solutions. The structure will consist of five floors and a basement and will add 270,000 square feet of floor space to Abbott's production facilities. Work is expected to be completed in one year.



Architect's drawing of addition to Abbott Laboratories which is expected to be completed in about a year. Work was started on the $1,800,000-building in December.

Collins to Visit New York

D. R. Collins, chairman of the board of Goya Ltd., will visit New York from February 20 to March 4 in connection with the distribution of Goya perfumes

D. R. COLLINS

in the United States. He may be contacted through Goya's advertising agents, Colman, Prentis and Varley, Inc,. 40 East 49th Street.

Robins' Largest Training Class

Thirty-one new medical service representatives of the A. H. Robins Company, Inc., attended the largest training class ever conducted by the company a short time ago, and have since been assigned to various territories throughout the United States.

Ross Cosmetic Consultants

Jack Ross, formerly associated with Revlon and Max Factor, respectively, has announced the formation of J. Ross Cosmetic Consultants at 161 West 18th Street. The telephone number is WAtkins 9-4256.

New Sharp & Dohme Building

Sharp & Dohme is constructing a modern branch office and warehouse at 2208 Asquith Street, Baltimore, according to E. W. Metzger, director of domestic branches. The one-story building, expected to be completed in May, will contain 26,000 square feet of floor space.

Kates Named Sales Representative

Maurice Kates has been appointed sales representative for the New England and upstate New York territory of Polak's Frutal Works, Inc. He will make his headquarters in Boston.

Searle Files Stock for Sale

G. D. Searle & Co. recently filed a registration statement with SEC covering 246,573 shares of $5 common stock. Of this amount 26,573 shares of authorized but unissued stock will be offered by the company to employees and 220,-000 shares will be purchased by underwriters from certain large stockholders.

Stiles on Advisory Committee

David D. Stiles, associate director of sales at the Abbott Laboratories has been named a member of the advisory

DAVID D. STILES

committee of the University of Illinois College of Pharmacy. His appointment extends for a period of five years.

Take 85-Day Boat Trip

Francis T. Dodge, chairman of the board of Dodge & Olcott, Inc., and Mrs. Dodge sailed in January on the R.M.S. Caronia for an eighty-five day voyage to the West Indies, South America, Africa, and Mediterranean ports. Mr. Dodge plans to visit D. & O. sales representatives and buying agents in Europe, East Africa and South America.

Warner Firm Reorganized

The firms affiliated with both the William R. Warner & Co., Inc. and Richard Hudnut Company in the United States and eighteen foreign countries were reorganized in January under the new title of Warner-Hudnut, Inc.

Elmer H. Bobst, president and director of the parent firm, William R. Warner & Co., Inc., was elected president of Warner-Hudnut at the annual meeting of the board of directors in January and agreed to renew his existing contract for five years.

Hobson Named Credit Manager

R. Milton Hobson has been named credit manager of the Bodeker Drug Co. according to William T. Allen, president.

Sun Tube Expands

Sun Tube Corporation has purchased an additional building in Hillside, New Jersey, which will be used for the expansion of its aluminum slug and cap molding operations.

Thom Appointed Ass't Treasurer

Grenville P. Thom was named assistant treasurer of Bristol-Myers Company in January at a meeting of the board of directors. Mr. Thom has been credit manager of the company for the past twenty-two years and will continue in that capacity.

GRENVILLE P. THOM

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Absolute Supreme Flower Essence

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Schering Appoints Amster

The appointment of M. William Amster, M.D., as head of the medical service department has been announced by Francis C. Brown, president of Schering Corporation. He succeeds Dr. Norman L. Heminway who has become associate director of Schering's clinical research division.

DR. M. WILLIAM AMSTER

Douglas Heads Salesmen's Ass'n

Charles V. Douglas, Heyden Chemical Corp., has been elected president of the Salesmen's Association of the American Chemical Industry, Inc. for 1950. Other officers elected include Paul W. Hiller, Innis, Speiden & Co., as vice-president; Edward A. Bush, Bush Aromatics, Inc., treasurer; and Robert J. Milano, Millmaster Chemical Corp., as secretary.

Warren F. Schumacher, J. T. Baker Chemical Co., and Denman C. Peniston of the Solvay Sales Corp. were named directors for a three-year period, while Ralph L. Ericsson of Sumner Chemical Co. was elected a director for two years to fill the term of Mr. Milano, new secretary.

Riordan Named Hooker Treasurer

Dennis A. Riordan has been elected treasurer of the Hooker Electrochemical Company, succeeding John F. Bartlett who retired as treasurer and assistant secretary in December of last year, according to E. R. Bartlett, president.

In Foundation Ceremonies

Dr. William Lakritz, president of Florasynth Laboratories, and one of the directors of the Jerome D. Solomon Memorial Research Foundation, Chicago, recently participated in the opening ceremonies at the newly equipped laboratory and research library which has been set up in Hektoen Institute by the Foundation.

Mexican Ass'n Elects Officers

Benito Couriel was elected president of the Colegio de Quimico-Farmaceuticos Biologos de Mexico (Mexican Association of Pharmaceutical Chemists) for the years 1950 and 1951. Additional officers elected include Humberto Farrera, vice-president; Luz Maria Rodriguez, first secretary; Luis Lopez Bello, assistant first secretary; Vincente Castro second secretary; Francisco Gomez, assistant second secretary; Glemencia Briseno, treasurer; and Martha Tijerina, assistant treasurer.

BENITO COURIEL

Lambert Appointments

John Shiell has been appointed sales manager of proprietary products of the Lambert Pharmacal Company, according to E. T. T. Williams, president. Mr. Shiell will divide his time between the company officers in St. Louis and those at 930 Newark Avenue, Jersey City. James J. Antle has become assistant sales manager of proprietary products with headquarters in St. Louis.

Kammerer Heads Perfumery Ass'n

W. F Kammerer, manager of the Chicago office of George Lueders & Co., has been elected president of the Chicago Perfumery, Soap and Extract Association, Inc. Other members elected for the 1950 term include Benjamin Bridge, Jr., Bridge Chemical Co., as vice-president; Charles E. Arch, the Sheffield Tube Corporation, secretary; and Z. D. Sappenfield, Allen B. Wrisley Company, as treasurer.

W. F. KAMMERER

Nelson, Baker & Company Sold

The Purepac Corporation has acquired Nelson, Baker & Company, the Penslar Company, and subsidiaries and will operate both companies completely apart from its own operation. Basic sales policies will remain unchanged and field sales staffs have been retained, according to Purepac, which has engaged W. S. Gregory as general manager of its Nelson Baker-Penslar operation. Mr. Gregory had formerly been an executive of Nelson Baker for many years.

Joseph D. Solomon, far right, honorary president of Dr. Jerome D. Solomon Medical Research Foundation, showing some of the equipment in new laboratory to (left to right) M. Z. Holland, Dr. J. Lester Wilkey, and Dr. Wm. Lakritz, president of Florasynth Laboratories.

MEMORANDUM

TO Pharmaceutical Manufacturers

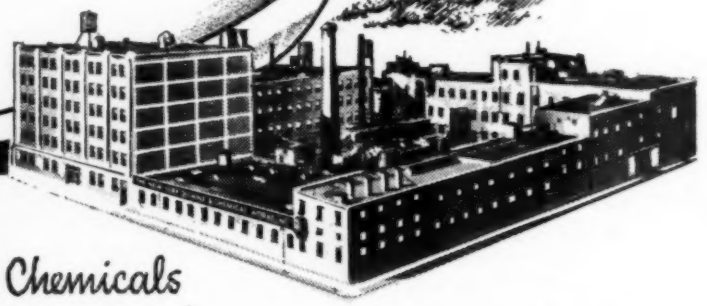
FROM N.Y.Q. - The Full Line Fine Chemical House

SUBJECT Minor Hypophosphites

The following MINOR HYPOPHOSPHITES have been added to the N.Y.Q. full line of fine chemicals manufactured specifically for you:

- Ammonium Hypophosphite N.F. VII
- Ferric (Iron) Hypophosphite N.F. VIII
- Magnesium Hypophosphite
- Manganese Hypophosphite N.F. VIII

Available for spot and CONTRACT deliveries in bulk and subdivision packages.



A Partial List of other N.Y.Q. Chemicals

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BARBITURATES
BISMUTHS
BROMIDES
CAFFEINES
CALCIUM SUCCINATE
CAMPHOR MONOBROMATED
CINCHONA SALTS
FINE ALKALOIDS
GLYCEROPHOSPHATES
IODIDES
LACTIC ACID
MERCURIALS
OPIUM DERIVATIVES
RUTIN
SALICYLATES
SULFA DRUGS
TANNIC ACID
TERPIN HYDRATE
THEOBROMINES
VITAMINS

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NYQ

The Full Line Fine Chemical House

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GENERAL OFFICES: 99-117 NORTH ELEVENTH STREET • BROOKLYN 11, NEW YORK
CHICAGO PLANT: 729 WEST DIVISION STREET • CHICAGO 10, ILLINOIS

Stoecklin Named Kolar Rep.

A. L. Stoecklin has been appointed representative of the new office of Kolar Laboratories, Inc., in Cincinnati.

A. L. STOECKLIN

Gauer with Hudson Mfg. Co.

Joseph A. Gauer has been appointed general manager of Hudson Manufacturing Company. He had formerly been associated with Fritzsche Brothers until his retirement as manager of the Chicago branch.

Named to Medical Research Div.

Stanislaus H. Jaros, M.D. has been appointed to the staff of the medical and research division of Ayerst, McKenna & Harrison Limited, subsidiary of

STANISLAUS H. JAROS

American Home Products Corporation. Dr. Jaros had formerly been associated with the Arlington Chemical Company and with the Burroughs-Wellcome Company.

Broder Industries Sold

The tools, dies, molds and equipment of Broder Industries has been acquired by Sam Schwartzman, who has re-organized the company under the name of Calumet Manufacturing Co., with offices at 565 Fifth Ave., New York. The new company will manufacture metal and plastic lipstick containers, rouge boxes, plastic jars and metal and plastic specialties.

Joins Vick Subsidiaries

Stephen G. Capkovitz has been appointed chief chemist and perfumer of Prince Matchabelli, Inc., Seaforth, Inc., and the Sofskin Company, subsidiaries of Vick Chemical Company, according

STEPHEN G. CAPKOVITZ

to Hugh D. McKay, chairman of the board of Prince Matchabelli and Seaforth. Prior to this appointment, Mr. Capkovits had served as chief chemist of Yardley of London and Albert Verley, and assistant perfumer of the Norda Essential Oil and Chemical Company.

50 Years with Lueders

August Miller, chief of the receiving department of George Lueders & Co., recently completed his fiftieth year with the company and was concurrently honored at a luncheon party at the Drug and Chemical Club. Mr. Miller became the seventh employee to finish fifty years with Lueders.

George F. Applin

George F. Applin, manager of the Philadelphia Branch of Mallinckrodt Chemical Works since 1912, died January 31 at his home in Philadelphia at the age of sixty-six. Born in Albany, N. Y. September 15, 1883, he was educated in Albany High School. Following his graduation in 1902 he was associated with Howard Gauss, drug retailer, then assistant to his father who was general manager of Walker & Gibson Company, wholesale druggists of Albany, and later with Eli Lilly & Co., entering the employ of Mallinckrodt in 1905. Mr. Applin was appointed general manager in the Philadelphia area in 1912, opening an office and warehouse there at that time. He retained this position until the time of his death.

Exceptionally well liked and well known throughout the Philadelphia territory, he was past president of the Philadelphia Drug Veterans Association; director and vice-president of the Philadelphia Drug Exchange; past president of the Philadelphia Drug Club; trustee of the Philadelphia College of Pharmacy and Science. He was also a Mason and trustee and steward of the First Methodist Church of Philadelphia. His wife and son survive him.

Grant R. Graham

Grant R. Graham, first vice-president of the wholesaling affiliate of Smith, Kline & French Laboratories, died early in January at the age of 52. Mr. Graham first worked for the Powers, Weightman & Rosengarton Co., later joining Valentine H. Smith Co., where he became vice-president. When this company was absorbed in 1929 by Smith, Kline & French, Mr. Graham became credit manager of the latter, and advanced to the vice-presidency in 1933. He was a member of the Board of Control of the National Wholesale Druggists Association, the Pennsylvania Pharmaceutical Association, and the Philadelphia Drug Exchange. Surviving are his widow, Mrs. Agnes Flynn Graham; two sons, Richard W. and Alexander J. Graham; a daughter, Marilyn D. Graham; and a sister, Dora Graham.

Edward I. Hopkins

Edward I. Hopkins, of J. L. Hopkins & Co., died recently at his home in New York at the age of sixty-six. He was the only son of the late J. L. Hopkins, founder of the company.

Lothair S. Kohnstamm

Lothair S. Kohnstamm, president of H. Kohnstamm & Co., Inc., died last month at the age of sixty-nine at his home, 1185 Park Avenue. Mr. Kohnstamm in 1932 became president of the company which was established by his granduncle, Joseph Kohnstamm, in 1851. He had been associated with the firm forty-eight years and had taken an active part in helping the United States Government arrive at standards for the Federal pure food and drug act. Surviving are two sons, Paul and Richard Kohnstamm, and a daughter, Mrs. Leslie Ogden.

Mrs. Ruth Dow Doan

Mrs. Ruth Dow Doan of Midland, Mich. and wife of Leland I. Doan, president of the Dow Chemical Company, died in January during a visit to New York. Her death, which occurred while she and Mr. Doan were dining, was attributed to natural causes.

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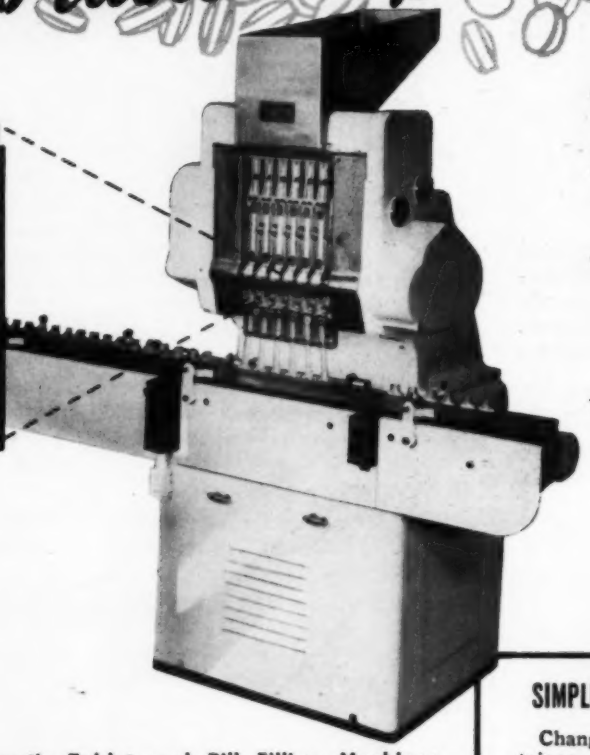
Counts and fills up to 360,000 tablets or pills per hour

The tablets or pills are counted by means of mechanical counting wheels with unfailing accuracy; correct count is a mechanical certainty. The tablets drop into the containers individually, thus keeping dusting and breakage at a minimum. If the tablets go into the machine whole, they come out whole.



★ The Model TBS fills any count, odd or even, of pills and tablets, coated and uncoated, and some types of capsules, into bottles, cartons, boxes and other rigid containers.

★ Produces speeds of from 60 to 150 filled containers per minute on counts of 12 to 100. Proportionately lower speeds on higher count containers.

★ Is available equipped with 4, 6, 8 or 10 filling chutes, to suit individual volume and speed requirements.

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Model TBS, *US* **Automatic Tablet and Pill Filling Machines** are designed for high speed, fully automatic counting and filling of tablets and pills and some types of capsules.

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Change-overs in count, container or product can be made easily and speedily, by the use of quickly interchangeable units. Following are typical change-over times:

Change of count .... 5 to 10 min.
Change of container..10 to 15 min.
**Change of product* ..20 to 30 min.

*(Indicated time applies to change in size or shape of product, includes cleaning of machine, preferably by vacuum, and will vary with conditions.)

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Management Forum

By FRANCIS CHILSON
Industrial Consultant

Big Business

The government suits against the A. & P. and Du Ponts involve principles which affect everyone and provide us with an opportunity to compare the management of the two firms. By every means possible, with truth and with fiction, the A. & P. is endeavoring to influence public opinion in its behalf and to prejudice the government's case before it is actually brought into court. After an initial public protest DuPont is going its own quiet way preparing its case without endeavoring to prejudice anybody, and you may be sure that when finally their case is heard, it will be found to have been exceedingly well prepared.

The theme of the A. & P. protests is that the great buying power of the firm enables it to keep prices down. From what I know, from experience in the food business, I think this is pure fiction. But even if this contention were demonstrably true, one charge of the government's would automatically be established, because any firm large enough to keep prices down is also large enough to keep them up whenever it wishes to do so. In other words the A. & P. or any such firm has too much power. For many reasons other than this I'd like to see the A. & P. subdivided.

DuPont on the other hand has grown vast and powerful, not by price control one way or another; not by buying up competitors and unrelated companies as so many of the big holding companies do; but simply by the outward pressure of its own creativeness. DuPont has created not merely new products but whole new industries.

No one can deny the A. & P. and DuPont (and many other companies like them) full measure of credit for their contribution in building our economy, but there should be an optimum size beyond which a corporation should not be permitted to grow. How big that is no one can say; one can only guess. No one, certainly, would like to see a combination of DuPont, U. S. Steel and Standard Oil. We'd know that would be too big because such a combine not only could control the economy but the government as well. When any corporation gets so big that it can control prices of products indispensable to the nation, it runs the risk of government control as a public utility and that's only one step from government ownership—socialism, communism or any other ism you like.

In a big nation like ours with a big economy, there must be big corporations especially in the primary industries. Only big corporations have the capital to undertake the research and development work necessary to maintain growth and incidentally that growth itself automatically creates a whole fringe of new industries, and thus provides increasing opportunities for small businesses of every kind. The problem, like the problems of government, is finally insoluble. As individual citizens our only hope is to maintain an alert government which will from time to time smack the big corporations down when they seem to be too big. Sometimes the government will win; sometimes it will lose but so long as it continues to fight bigness *per se* we shall have a system of checks and balances that will continue to control economic as well as political power.

Corridors

I'd like to have the value of the space wasted in corridors throughout the trade. Many people seem to feel that there is some disadvantage in having plant traffic pass from one department to another unless it is confined within partitioned corridors. It is my contention that when a new plant is properly laid out, there should be very little through traffic excepting that of supervisory personnel, and supervisors should go through the departments anyway to see what's going. People forget that it is not only the space within the corridors that is wasted—they say, indeed, that such space is not wasted anyway because aisles must be provided for—but the important waste—the real waste lies inside the partitions because equipment cannot be backed tight against partitions. Usually about two feet is left between the partition and the equipment so that, if for no other reason, maintenance mechanics can service the equipment. Sometimes handwheels and other operating devices are located on the back of equipment and hence enough space must be left to get at them. Now if you

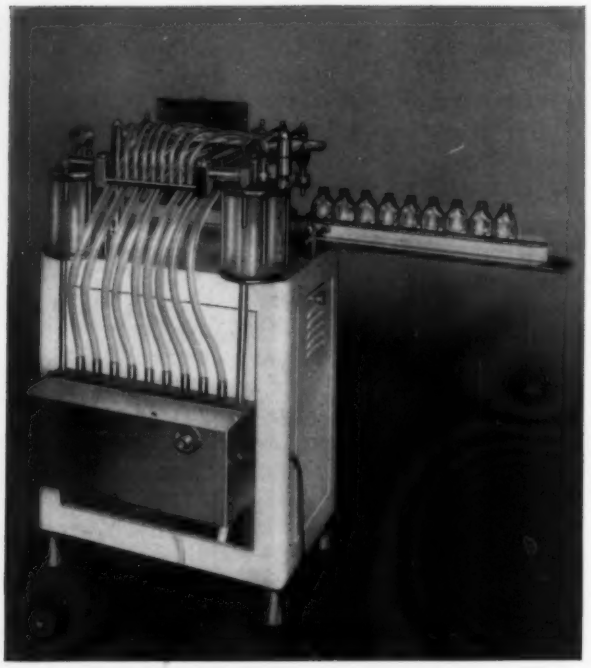

Photo of Rear view of the New Model B-49 Straight-Line Vacuum Filler showing set-up utilizing nine tubes for handling six-ounce containers

Quick, On-the-Job Changeover For Any Container Up to Gallon Size

NEW STRAIGHT-LINE VACUUM FILLER

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Mechanical innovations introduce more comprehensive automatic machine operation for eliminating hand servicing. The product handling system is designed for quick clean-up after runs and the operating mechanism is simple and substantial for many years of enduring, uninterrupted filling service.

Seldom does a new machine, so quickly, make a place for itself in established filling set-ups either on steady production or as a versatile standby unit for peak loads. The Model B-49 Bulletin will give you the interesting details; write for it today.

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have a five foot corridor enclosed within partitions, space consumption actually is nine feet. When a five foot aisle is maintained with no partitions equipment can be backed up to the aisle on both sides thus making it perfectly accessible without interference with whatever traffic there may be. Space costs too much these days to waste any of it.

I have another reason for opposing partitions whenever it is possible to avoid their use: they are costly. A steel and glass soundproof partition costs from fifteen to twenty dollars a running foot. Tile and glass which is popular in many pharmaceutical plants costs from forty to sixty dollars a running foot depending upon height. Partitions moreover decrease the flexibility of operating areas enormously. Of course there are operations which must be enclosed—ampouling for example—and in such instances partitions are mandatory. My advice is: make your layout without any partitions at all; then put them in where no alternative is possible.

Hypersonics

Brush Development Company, Cleveland, Ohio, announce the availability of Ultrasonic Devices for laboratory, pilot plant and industrial applications. This news is of primary importance to manufacturers of suspensions, ointments and cosmetic creams especially. This department several years ago suggested the application of ultrasonics to emulsification, clarification, mixing and sterilization operations, but up to now practical, economical equipment has not been available.

Ultrasonic energy has been given many and various treatments in recent semi-technical writings. The full impact of the enormous possibilities of ultrasonic energy can be understood only if the action and effect of this phenomenon is, at least to some extent, realized. The powerful action of ultrasonic vibrations is made possible by the tremendous accelerations connected with it.

As compared with gravity, which produces an increase in velocity of 32 feet per second each second in a falling body, the acceleration in a high-intensity ultrasonic wave in a liquid is extraordinary. The acceleration rate produced may be as high as 12,500 miles per second each second. Imagine, if you can, this action repeated first in one direction and then in the opposite direction 1,000,000 times per second. *Such an acceleration, applied continuously to a physical body, would move it a million miles in 10 seconds.*

The above conception of the degree of acceleration achieved with the production of ultrasonic energy is essential to an understanding of the applications of this new force. It is this acceleration which, when directed into molecules of a substance under treatment, can provide a number of chemical or physical phenomena which may bring about desired changes in molecular structures and other properties of the material being processed.

Ultrasonics, and their application to industrial problems on a laboratory or research basis, are more or less known in industry. Research divisions of many firms engaged in production and processing are familiar with the effectiveness of ultrasonic force when applied in specific processing techniques. The successful results obtained in processing a wide range of products—liquids, solids, powders and gasses—have created a tremendous interest in this new ultrasonic-force technique.

The use of ultrasonic energy is important not only in industrial manufacture but in biological and agricultural fields as well. Shown here is a brief list of accomplishments in various fields:

1. The complete emulsification of non-miscible liquids such as oil and water.
2. The suspension in a liquid of powdered material of different basic characteristics.
3. The rearrangement of the molecular structure within a great variety of substances.
4. (a) The acceleration of bacterial growth, or (b) destroying bacteria.
5. The acceleration of electrolytic agents.

All these past accomplishments, however. have been on a laboratory or test-tube scale due to many limiting factors.

It has been an accepted fact among many scientists for years that ultrasonic force would be of tremendous value to industry if the barrier of limiting factors could be overcome and this amazing force could be used in full-scale production units. After years of research and testing, The Brush Development Company has broken through these barriers with Hypersonic equipment and brings to industry the first full-scale apparatus.

The prime source of ultrasonic force is found in piezoelectric, literally "squeeze-electric," devices. This phenomenon, discovered by the brothers Jacques and Pierre Curie in 1880, has been studies with increasing vigor during the past 25 years.

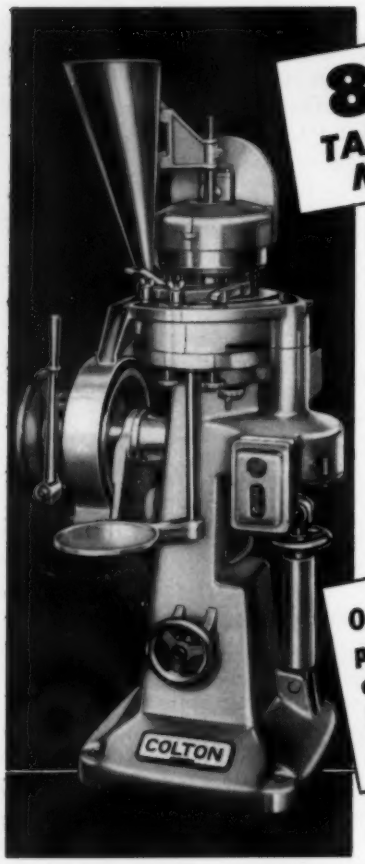
Quartz and other similar crystals have piezoelectric properties. This means that the crystalline structure of the element produces controlled vibrations upon the application of electric current.

A variety of methods were considered and tested in ultrasonic experiments. As time went on, it was found that one device was most practical in the production of high-frequency, high-intensity ultrasonics.

This device involved the use of natural quartz crystals which were processed to the necessary shapes and dimensions. However, during World War II the greater part of the world's known supply of natural quartz was used in large quantities for various purposes, leaving a very meager supply available. The major limitation of the use of natural quartz was the lack of crystals large enough for full-scale industrial use in ultrasonics.

Much effort has been put into research on artificial production of quartz and some promising results have been obtained, but crystals large enough for industrial ultrasonic applications would still be prohibitively expensive.

A solution to the problem of supplying large-size generators of ultrasonic energy came from a direction which scientists only 10 years ago could hardly have



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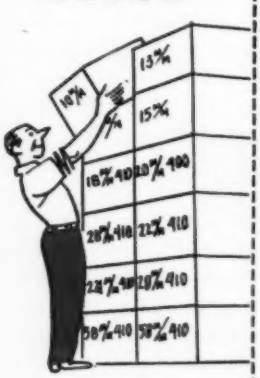

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imagined. About the beginning of World War II scientists at the Titanium Alloy Manufacturing Company (now a division of National Lead Company) found that certain ceramic materials containing Titanium, exhibited a dielectric capacitance far in excess of anything known before. War-time research led to the conclusion that this ceramic can be made to possess electric properties which show a striking analogy to the magnetic properties of iron and a mechanical response to applied electric energy which makes it comparable and in certain ways superior to the piezoelectric crystals such as quartz.

Intense study by Brush scientists of the novel electromechanical properties of this material led to the design of forms of ceramic "transducers" of electrical energy into ultrasonic sound energy which show operating characteristics entirely different from piezoelectric-crystal transducers or magnetostrictive devices.

Brush has developed techniques and methods of producing finished ceramic elements in a variety of shapes. Thus it is now possible to build large industrial-type transducers to fit practically any specific purpose. The ceramic material may take the form of a spherical shell or a cylindrical tube which concentrates the sound energy in a specific operating area.

One characteristic of piezoelectric crystals previously used is that the electrical driving voltage must be applied in a fixed direction and results in a mechanical action in a fixed direction. In the ceramics this limitation is not present.

In ceramic elements the direction of the mechanical action is determined by a polarizing electric field applied during manufacture and its direction may be made to vary at will from one point of the transducer to another. For example, in a tubular transducer element, the polarizing direction may be at all points directed toward the central axis of the tube.

Thus it is possible to obtain ultrasonic waves emanating uniformly from a curved surface; the waves thus produced may be concentrated into a limited area where a sound-energy concentration is obtained which is even much greater than on the surface of the ceramic element.

Another advantage of Brush ceramic elements is their ability to develop high power without the need of high voltages, as encountered in quartz-crystal generators.

Because of the flexibility of applications made possible by the Brush ceramic element and because of its definitely superior characteristics, industry for the first time has available ultrasonic equipment which foretells the widespread use of this revolutionary technique of processing materials. Brush maintains a testing and engineering laboratory and will gladly cooperate.

Points of View

There has been in the drug and cosmetic industry a marked let down during the past two years in the construction of new plant facilities. But the ball will soon start rolling again because the hoped for decline in construction costs has not materialized and in my judgement will not in our generation. As a matter of fact some signs point to still higher construction costs. So if you need a new plant don't wait much longer. And the drug and cosmetic industry needs new plants—so many of its plants are obsolete.

When a new plant is planned three points of view are possible: the point of view of the architect and builder; that of your own personnel (representing the "inside" viewpoint); and that of the trade expert who will look at your project from an industry wide viewpoint.

These viewpoints may be described this way: the architect knows little or nothing about your business excepting what he learns in a casual and necessarily limited study. What he does learn will be influenced (and therefore prejudiced) by your own people—a condition which cannot be avoided. The architect will accept without question statements of operating conditions and necessities as they are given him. Since architects operate in all industries they rarely are expert in any. But they must be listened to because they do know structures, and they do know what has been done in unrelated industries to solve plant problems that are similar to our problems. The architect will never attempt to project the future growth of the plant. He will wish to make certain that you have allowed enough space for present and anticipated developments. But beyond that he will not attempt to go. His basic idea is that, since the future cannot be predicted accurately, the thing to do is build another building whenever you need it. Architects have little conception of material handling or operating efficiency or costs.

The inside viewpoint is a viewpoint developed by the experience and observation of your own men. Many inside men have had no experience in any plant but their own; many have never even visited other plants. When their views are sought regarding a new plant layout, you can depend upon it they will want more space for operating departments; they will have some conception of what is needed for contemplated product additions and they will do a very fine job usually in creating a good layout for the business *you are now doing*. They've lived with their old layouts; to some extent they know what's wrong with them. But they do not know the industry and cannot be expected to anticipate what might be added in the future with respect to new products. They are not experienced in plant layout—such projects happen usually but once in a lifetime in any given plant—they are not plant designers. Inside men invariably over emphasize their present problems and can see clearly only their present business.

The trade expert's viewpoint is shaped by experience in every part of the industry—or should be. He is concerned not so much with what might be expedient now as he is with assuring his client that the layout is in accord with correct fundamental principles and also in harmony with the norms of the industry. He knows how, in course of time, drug and cosmetic companies grow and change their emphasis. He knows, from the

mistakes of omission and commission of other firms throughout the industry, what provisions to make to anticipate plant changes and expansion.

When the three viewpoints are harmonized an efficient and attractive layout inevitably results. When any one of them gets out of line money is wasted and results fall far short of what they should be. This explains the existence of so many inefficient plants throughout the industry. Luckily our profit margins are still so wide we are able to carry inefficient plants without worrying about them. I wonder if that always will be true?

The following information is supplied by manufacturers of the equipment described and claims made below by these manufacturers are passed along for what they are worth. Presentation of such notice in this department is not to be taken as endorsement of the claims or of the equipment.

Hard Capsule Filling

Organization of a new hard capsule filling department has been announced by Robin Pharmacal Co., manufacturers of compressed and coated tablets. The recent addition of Lilly capsulating equipment, according to Sidney Rich, president, has enabled the company to meet the widespread demand by manufacturers for a reliable, but economical hard capsulating service.

New Packaging Machine Co.

Perry Metal Products Co., of Brooklyn, N. Y., nationally known for their creation, development and promotion of automatic packaging machinery for pharmaceuticals, are expanding their activities in this direction, Samuel Sack, Perry president, announced today. A Pharmaceutical Division has been organized and placed under the direction of Frederick H. Guterman, division manager. Mr. Guterman was formerly an engineer and sales representative in the Mid-Atlantic district of General Electric Company.

Not only cost-reducing, scientific and rapid packaging but filling and labeling for the chemical and pharmaceutical industries will be the province of the new Perry Division. Special attention will be devoted to the creation of brand devices to meet unusual problems, as well as the utilization of methods previously developed. The goal will be the elimination of bottlenecks in production caused by packaging difficulties.

Perry is already known for its work in this field; the new set-up represents a co-ordination of activities. They have gained a good deal of recognition for their work on the "Accofil" which they are making for the Lederle Laboratories Division of the American Cyanamid Corporation. The machine is being used by manufacturers of penicillin, streptomycin, and other antibiotics all over the world.

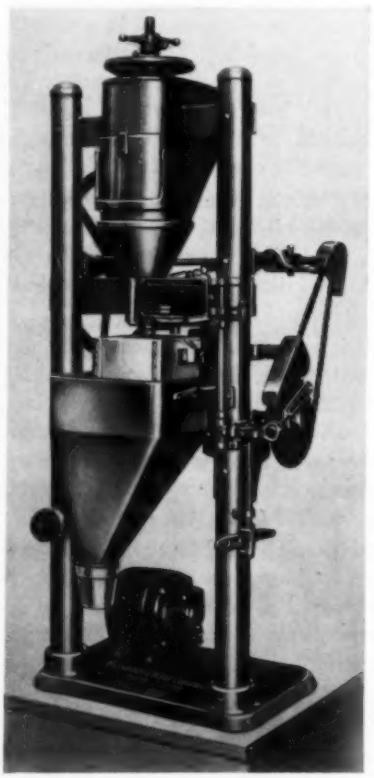
Formerly vials of these life-giving drugs were filled at a rate of 300 per operator per day. The demand far outstripped the rate of packaging. Perry, selected by Lederle to manufacture a two-operator machine which filled 20,000 vials a day, made delivery of the first of the packaging units in less than 35 days.

Electronic Weigher

The Automatic Scale Company, P. O. Box 46, Village Station, New York 14, New York, announces a new automatic electronically controlled net weighing machine known as Model NPV.

The new weigher will weigh up to 5 pounds of material and has a bucket capacity of 270 cubic inches. It will operate on bags, cardboard cartons, glass and metal containers.

The weigher is equipped with a specially designed and patented feeder that will handle such delicate materials as tea leaves without breakage, and at the same time assures a uniform flow of material to the weighing bucket. It also handles such materials as



spice, coffee, cereals and other materials not sufficiently free flowing to pass through gravity feeders.

An electronically controlled high speed valve closes when the exact weight is reached, thereby reducing the amount of material in suspension at the instant of exact weight. The uniform flow in addition to the high speed valve action makes possible a high degree of accuracy on weights up to 5 pounds.

A preliminary feed chamber is provided immediately above the feed cut off valve. This allows material to build up during that period of the cycle when the bucket is dumping its charge. When the valve is opened, this chamber discharges into the bucket and

acts as a preliminary charge, being immediately followed by the slower uniform feed. In this fashion it is possible to get high speeds combined with an accuracy only found on lower speed weighing. Speeds up to 25 and 30 per minute on 1 pound charges with an accuracy of 1/16th of an ounce have been obtained on other models with this type feeder in many plants.

A shock absorber is used to remove vibrations when the bucket door is opened and closed. This shock absorber filters out vibrations that otherwise might cause bad weights and unnecessary wear on knife edges and bearings.

Oilless self-lubricating bearings are used so as to keep the oil can away from food being packaged. This, of course, reduces the hazard of getting oil into packaged products through carelessness of operator.

A hand lever is provided so that the weigher can be set for fully automatic dumping or be dumped at the will of the operator.

Speed of the Model NPV can be predetermined by the operator. By the addition of a simple coordination mechanism the weigher can be synchronized with any automatic machine or conveyor line.

Superdraulic

Superdraulic Corporation, 14256 Wyoming Avenue, Detroit 4, Michigan, announces a new variable delivery model of their Junior Superdraulic pump.

The Junior, with 6 gallon per minute capacity at 5,000 pounds pressure is ideally suited as a pulsation-free feed for production machines as well as on test operations.

Now, with the manual variable control, output can be regulated from 0 to 6 gallons per minute for convenient control of machine operation without variation in the motor speed.

The overall dimensions of the new pump including base is only 11½" by 10". It is available without the base for flange mounting.

A new illustrated catalog tabulates output and input details on both the variable and constant models.

Ivers Lee—England

The growing importance of Sanitape-Sealtite packaging abroad as well as at home, is evidenced by this booth of Ivers-Lee Great Britain. It was displayed at the First National Packaging Exhibition in Manchester and created unusual interest, particularly among pharmaceutical manufacturers.

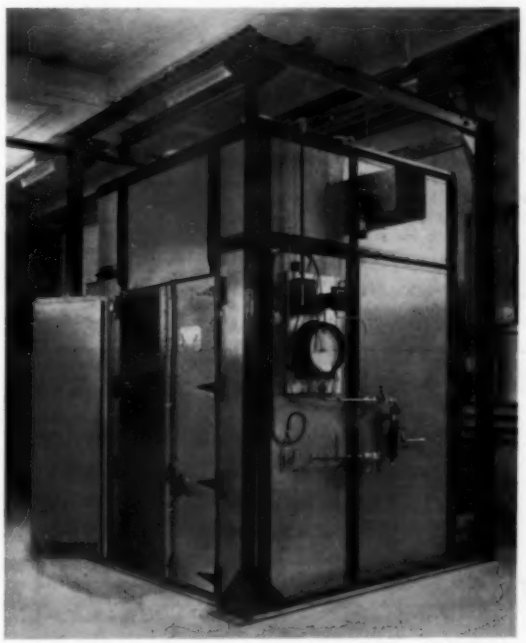
Stokes Dryers

"STOKES VACUUM SHELF DRYERS" is the title of a new 4-page bulletin now available from the F. J. Stokes Machine Company, Philadelphia, Pa.

Complete description and specifications, including sizes, are given for STOKES VACUUM SHELF DRYERS which provide safe, rapid drying under vacuum.

Weight Dryer

A truck dryer of unusual design is offered by Lydon Brothers, Hackensack, N. J. It differs from customary dryers in that the floor of the unit is actually a scale platform. Hence you can determine the exact amount



of moisture you wish to remove and set your scale control accordingly. When the requisite amount of moisture has been removed the scale will cut off the steam and air supply automatically.

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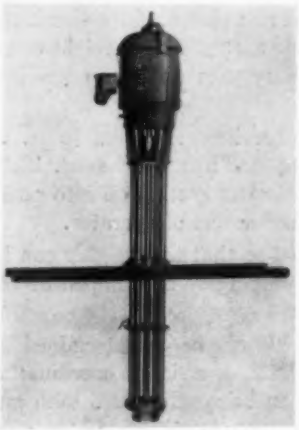

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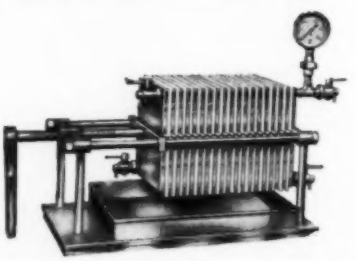

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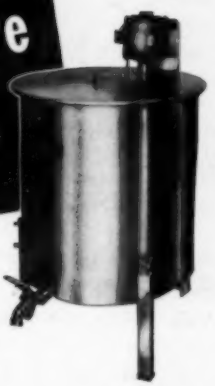

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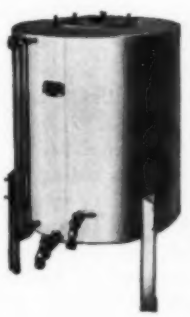

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Patent Thoughts and Trends

By THOMAS CIFELLI, Jr., Patent Attorney*

Sympatholytic Agents

This month our attention will be given to three items: we shall take a long look at two recent U. S. patents which are believed to be the first ones which cover sympatholytic agents; and a short look each at the position of fluorinated compounds as the subject of future patent protection; and the article entitled "Patents On Doom," by Di Cyan and Glaccum, This Journal, December, 1949, page 644.

On December 13, 1949, George Rieveschl, Jr. and Robert W. Fleming obtained U. S. patents 2,490,834 and 2,490,835, the patents being assigned to Parke, Davis & Company. U. S. 2,490,834 covers benzhydryl beta hydroxy alkyl amines and U. S. 2,490,835 covers the corresponding beta haloalkyl amines. It is the latter compounds which are the important ones, these being said to be powerful sympatholytic agents having the ability to block the pressor effect of epinephrine and therefore useful in peripheral vascular diseases and neurogenic hypertension. The alcohols disclosed and covered in U. S. 2,490,834 are used in the preparation of the sympatholytic halides.

An interesting aspect of the sympatholytic patent situation is that Rieveschl and Fleming apparently have obtained the first U. S. patents covering these substances, even though they are not believed to be the pioneers in this field. This honor probably belongs to Drs. Mark Nickerson and Louis S. Goodman, of the University of Utah, School of Medicine, whose report on N,N-dibenzyl - beta - chlorethylamine (Dibenamine), Proc. Am. Fed. Coin. Res., 2: 109, 1945, stimulated considerable pharmacological research on the problem. It is true that ergot alkaloids were first studied for this purpose by Dale (1906). Later, yohimbine and ethyl yohimbine, certain benzodioxane derivatives and other substances were reported to possess some degree of adrenergic blocking activity, prior to the publication of Nickerson and Goodman. However, the usefulness of the compounds prior to Nickerson and Goodman was said to be limited by their toxicity, side-effects, or short duration and incompleteness of blocking action.

One not a medical man might well ask why should anyone get excited about materials having the long-winded name of sympatholytic or adrenergic agents. The answer could probably only be adequately stated and understood by medically-trained individuals. Nevertheless, even laymen can understand the implications. For, one needs cite only a few examples to illustrate the importance of sympatholytic agents in the treatment of disease. The treatment of high blood pressure represents a crucial medical problem even today. This can easily be appreciated when it is noted that one out of every three people over fifty years of age die of some disease related to the heart and blood vessels. At present, an operation known as the Smithwick operation is sometimes performed in the treatment of high blood pressure. This operation involves removal of certain parts of the sympathetic nervous system. The use of sympatholytic agents makes it possible to accomplish the desired purpose without any operation at all. In addition to eliminating the ordeal of such an operation, the permanent loss of the excised parts is also avoided by the use of the sympatholytic drugs. Again, in the treatment of certain types of diseases of the blood vessels of the arms and legs (peripheral vascular disease), operation of the sympathetic nervous system is often performed. This condition could be treated medically with sympatholytic agents.

In the more highly organized forms of life the nervous system is indispensable for existence and is necessary in order to keep the internal environment of the organism constant and to allow adaptation of the organism to its environmental surroundings. In mammals the nervous system is divided into two large parts, the central nervous system consisting of the brain, spinal cord and peripheral nerves, and the autonomic or visceral nervous system. The central nervous system controls such processes as thought, locomotion and sensation, as well as emotion. The visceral nervous system is concerned with regulating all the autonomic functions of the body including heart rate, blood pressure, circulation of blood to different parts of the body, secretion and motility of the stomach and intestine, size of the pupil, sweating, temperature control, respiration, urinary tract function, etc. It is also concerned with emotions, particularly in joy, anger and fear. Life would be impossible without the visceral nervous system which is also intimately connected anatomically and physiologically to the central nervous system.

The visceral nervous system is likewise traditionally divided into two parts, one known as the sympathetic nervous system and the other as the para-sympathetic nervous system. Most organs of the body are supplied by nerves from both of these divisions and as a general rule the actions of these nerves stand in opposition. For example, the sympathetic nervous system causes dilatation of the pupil of the eye whereas the parasympathetic nervous system causes slowing of the heart beat whereas the sympathetic nervous system causes speeding of the heart rate. The sympathetic nervous system causes constriction of blood vessels and a rise in blood pressure, whereas the parasympathetic system causes dilatation of blood vessels and a fall in blood pressure. The intestinal tract is stimulated by the parasympathetic system and relaxed by the sympathetic system.

Within the last twenty years it seems to have been definitely established that when a nerve impulse travelling over a nerve reaches the muscle cell or gland cell, a chemical substance is released which acts on the muscle or gland cell causing it to respond in its characteristic fashion. In the sympathetic system this chemical substance is known as sympathin, and perhaps is identical with the hormone of the adrenal medulla gland which is called adrenalin or epinephrine. In the parasympathetic nervous system the chemical is known as acetylcholine.

*Newark. New Jersey

In other words these two chemicals, acetylcholine and epinephrine, when given to animals or man will result in the same type of bodily reactions as caused by stimulation, respectively, of the parasympathetic and sympathetic nervous systems. Indeed, in the body, the sympathetic nervous system discharges not only sympathin but also epinephrine from the adrenal medulla.

Many diseases, syndromes, and symptoms experienced by patients are related to abnormal functions of the para-sympathetic or sympathetic nervous system or to an imbalance between these two systems. In the para-sympathetic field excellent drugs such as belladonna alkaloids are available to cause a blocking of either acetylcholine or para-sympathetic nerve impulses. In the sympathetic field, no such drug is available. Although, as already indicated, some drugs have been suggested in this latter field, they have not been found to be suitable, because they are said to be too toxic to be used extensively in man or because they are not sufficiently potent, or because they have so many side-effects that no specificity of action can be obtained.

It is not surprising therefore, in view of the importance of the Nickerson and Goodman publication, that Dr. Nickerson was awarded the annual John J. Abel prize in Pharmacology for 1949 by the Society for Pharmacology and Experimental Therapeutics, and that the activity of other scientists including Rieveschl and Fleming was apparently stimulated.

"Patents on Doom"

In their article, Di Cyan and Glaccum, while praising the U. S. patent system nevertheless feel that there are a large number of medicinal patents which they believe should not be issued because they cover "trivia." The authors did not hide behind general statements but actually specifically pointed out a number of patents which they believe should not have been issued.

No attempt will be made here to comment on the opinions expressed by Di Cyan and Glaccum. However, two statements of patent law made in the article and susceptible of misunderstanding will be commented upon here. The first statement follows: "Under the U. S. patent system, such a reward is the monopoly given to the inventor for a limited period of time, to practice and utilize the invention disclosed in his patent, but particularly to prevent others from practicing or utilizing it for the statutory period of monopoly."

It is important to keep clearly in mind that a patent does *not* grant the right to practice and utilize the invention disclosed therein, but merely the right to prevent others from practicing or utilizing the invention. It is believed that the quoted matter is not entirely clear on this point.

On page 645 the Di Cyan and Glaccum article states that "The courts have held that a known composition used medically to treat a specific ailment is not patentable." If what is meant by this statement is that the courts have held that a known composition cannot be repatented, the statement is correct. However, if what is meant is that one cannot obtain a patent covering a process for utilizing a known composition in the treatment of the human body, the statement is not believed to be correct. In this connection, it is nevertheless interesting to note that for a long time the U. S. Patent Office did follow the policy of not allowing claims to the treatment of human beings. At present, it is understood that this policy is no longer followed.

Fluorinated Compounds

Fluorine, for various technical and economic reasons, has not come into any great commercial usage. However, because of its connection with the atomic bomb project during the war, a lot of work was done for the government, involving the preparation and properties of fluorinated compounds. That it is not beyond the realm of possibility that some commercial use apart from the atomic energy project will result from this work, is believed to be quite apparent in the enfolding patent literature. It would seem very fitting should work initiated in connection with a death-dealing project eventually point the way to life-preserving drugs.

RECENT PATENTS

2,489,927—Merck — Intermediates for Amino Acids.

2,489,965—Upjohn — Germidical Compositions.

2,490,780—Sterling Drug—Para-Aminobenzamides.

2,490,911-2—Parke, Davis—Purification of Antifibrinolysin.

2,490,937—Abbott Labs.—Aminoalkyl-phenyl Lactones Antispasmodics.

2,491,065—Nederlandsche — Process for producing ascorbic acid from 2-heto-levo-gulonic acid.

2,491,452—Am. Home Products—Vitamin preparation Stabilized with Glucous-delta-lactone as a stabilizer.

2,491,473—Burroughs Wellcombe & Co.—N-Dialkyl Alkoxynaphthamidines.

2,491,537—U. S. A.—Liquid Injectable Oil-Pectin Drug Compositions.

2,491,741—J. H. T. Ledrut—Double Camphorate of Hyoscyamine and Morphine.

2,491,815—Indiana Univ. Foundation—5-Phenyl-5-Sec. Butyl Barbituric Acid.

2,492,128—Raytheon Mfg. Co.—Accelerating Growth of Micro-Organisms by intermittent exposure to certain compressional wave vibrations.

2,492,188 to 195—Merck—Dihydroxy-Ketopregnines and the Like.

2,492,243—Merck—Esters of Penillic and Isopenillic Acids.

2,492,467, 2,492,487—U. S. A.—Antimalarial quinolines.

2,492,492—J. T. McCreary—Lipstick Holder & Applicator.

2,492,636-7—B. W. Hendrickson—Hair Curler.

2,492,642—F. Interrante—Combination Hair Curler and Bobby Pin Fastener.

2,493,090—Wm. S. Merrell Co.—2,3-Alkyl-substituted Glycidamides.

2,493,202—Merck—Fluid Oil-beeswax vehicle for parenteral administration of drugs.

2,493,318-22—Eli Lilly—Imidazolium Compounds.

2,493,471—Parke, Davis—Stabilized Sympathomimetics.

2,493,578—Ward, Blenkinsop & Co.—Cyano-alkylamino derivatives of acridine.

2,493,645—Hoffmann - La Roche — Nicotinic Acid—Beta-picolyl-amide.

2,493,729—Hoffmann-La Roche—1-Alkyl-2-Phenyl-3-Alkyl Indanes.

2,493,730—Hoffmann-La Roche—2-(p-Oxyphenyl)-3-Isopropyl-6-oxyIndanes.

2,493,773, 2,494,253—Ciba—Hydrophenenanthrene.

2,493,780—Merck—3, 11—Diketo-17, 20-Dihydroxypregnanes.

2,493,797—Givaudan—2,4-dinitro-3-ethyl-6-tertiary butyl anisole musk.

2,494,083—Wyeth—Desubstituted Glycyl Derivatives of Amino Quinolines.

2,494,084—Wyeth—Barbituric Acid Derivatives.

2,494,125—Burroughs Wellcome — Uracils.

2,494,254—Ciba—Hydrofluorene Carboxylic Acids.

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READERS' QUESTIONS

TEETHING DROPS: Your favor of submitting a formulation which can be used satisfactorily for relieving pain of teething babies will be appreciated. Trenton.

The following formula for teething drops, given in a British publication, should meet your requirements:

Caraway oil	**1 dr.**
Oil of dill	**1 dr.**
Alcohol	**1 oz.**

EGG SHAMPOO: Can you tell me how egg shampoos are made and the proportion of egg used in making them? Montclair.

One procedure is to incorporate about one per cent of dried egg yolk in a shampoo formula. Of course, its inclusion is an indication for the use of preservative. Further details on the use of egg in shampoos, is provided in British patent 569,106 granted to D. Cauchaner in 1945.

UNIVERSAL INDICATOR: As a subscriber I am taking the liberty of submitting a question. I would like to prepare a universal indicator solution which will show the range of color changes from pH 1.0 to pH 10.0. I should be very much obliged if you will give me a good formula and instructions. Milano.

I do not have a formula for an indicator which will cover the pH range you desire, however, a quite satisfactory indicator has been presented by van der Burg. According to his method, a universal indicator can be made from five mg. of thymol blue, 25 mg. of methyl red, 60 mg. of bromothymol blue and 60 mg. of phenolphthalein. These are dissolved in 75 per cent alcohol to make 100 cc. of solution; this is then neutralized with hundredth-normal sodium hydroxide to produce a green color, but for high and low pH values it can be used directly. This combination shows at whole pH values between 4 and 10 the following distinct color changes; red, orange, yellow-green, blue, indigo and violet. Intermediate color changes are recognizable with an accuracy of 0.5 pH.

CAMPHORATED LIP POMADE: We would like to take advantage of your service to subscribers who have technical problems. We manufacture camphor ice. The base is paraffin and white petrolatum. This has proved to be unsatisfactory lately since the product will soften in the warm weather and sag in the tube. Will you be kind enough to let us have a formula or the name of a base that will eliminate this trouble. New York.

I think that a product based on the following formula may help to eliminate some or all of your problems. It is my impression that it will yield a firmer product and it will not be quite so susceptible to temperature changes:

Powdered camphor	**20.0 parts**
Light beeswax	**18.0 "**
Soft, white petrolatum	**15.0 "**
Spermaceti	**47.0 "**

Melt the spermaceti, beeswax and petrolatum. Mix and when the temperature drops to about 50°C. add the camphor.

HAIR WAVING AND HAIR STRAIGHTENING CREAM: We have been advised by manufacturers of ammonium thioglycolate that it is not a satisfactory product to use in a cream for the purpose of straightening the hair of colored people. However, we have noticed in the past year or so a number of products on the market which smell as though they contain ammonium thioglycolate. We have, also, been advised that there has been a patent issued on a product of this nature. Could you advise us about this matter and if possible send us a formula? Paris.

I believe you refer to the preparation described in U. S. Patent 2,418,664. This describes a preparation for curling straight hair or for straightening curled hair, whichever the case may be. The patent claims include the following procedure for making a cold hair-waving and hair-straightening cream having a paste-like consistency.

Emulsifier containing approximately 90% polyglycol monostearate and approximately 10% stearyl amide	**21.00 parts**
Thioglycolic acid (38% aq. soln.)	**13.00 "**
Ammonia (26% aq. soln.)	**1.85 "**
Ammonium sulphite	**1.00 "**
Caustic soda	**1.00 "**
Sodium lauryl sulphate	**.03 "**
Water	**62.00 "**

LIQUID SKIN CLEANSER: I am unable to find a formula given several years ago for a liquid skin cleanser using sodium lauryl sulfate. Will you please send a formula for such a product to me as soon as possible. Chicago.

I think the following will serve your purpose:

Diethylene glycol monoethyl ether	**5.0 parts**
Sodium lauryl sulfate	**1.5 "**
Alcohol	**4.0 "**
Water	**89.5 "**

The detergent is a rather common material now and I think it should be available in almost any chemical supply house.

ASTRINGENT FACIAL LOTION: Please advise me concerning an alkaline astringent lotion suitable for a facial astringent. Hammond.

An effective but simple lotion to meet your requirements can be made from the following:

Borax	**2.5 parts**
Glycerine	**5.0 "**
Alcohol	**20.0 "**
Water	**72.0 "**
Perfume	**0.5 "**

YOUR TRADE-MARK RECORD

By JOHN H. GRAHAM
International Patent and Trade-Mark Consultant

Some Important Changes In Trade-Marks Classes

Back in September 1949 we gave advance information that the Trade-Mark Division of the Patent Office was instigating a new classification for the goods we are interested in here.

With the coming of the new year, this new system has been started. Some confusion may be expected but the step is definitely in the right direction.

For untold years cosmetics and similar toilet goods have been mixed up with all sorts of chemicals in class 6. While granting that when the first form of classification was made, somewhere around 1883, cosmetic trade-marks were not as numerous or as necessary, it is a strange thing that we have to wait some fifty years for a streamlining in this country of fast and sure modernization. However, the act is done and cosmetics and toilet preparations have their own brand new class, number 51.

In like manner, soaps have been hidden for fifty years in class 4 for abrasives and polishing materials. This was all right when soaps did take the hide off you and give the skin that polished (and Tight) feeling, but today it is antiquated to say the least.

To solve this problem class 52 has been created for "Detergents and Soaps."

In like manner, drugs have been segregated from class 6 and now are listed under "Medicines and Pharmaceutical preparations," as class 18, which class previously was unlisted.

Class 50, which was for service marks has now become the catchall for anything left over, namely for "merchandise not otherwise classified." Service marks are now in a new group of classes, starting with 100 and since class 52 is the last so far listed, it looks like further breakdowns of crowded classes are under consideration.

All this may seem on its face as unimportant to some of you, but it had a very definite effect on the trade-mark record, which this column continues.

When that compilation of trade-marks was issued, it was based on classes 4 and 6 and the code of goods given in it were from those classes. Now we have more classes to consider. Old classes 4 and 6 are by no means out and 51 and 52 added.

This is not the only change. Due to the various broadenings of meaning in the Lanham Act and in the decisions we have reported under that Act, it becomes increasingly clear that the term "similar goods" is to be widely considered. No longer can we rely on the argument that the goods being in different classes so there is no confusion in the goods. Side by side shelf occupancy seems enough today to show confusion. And with so many multiple department stores and the drug store, selling everything from sandwiches to sunlamps (including some drugs too) this test of lack of confusion of goods goes by the board.

Therefore, we must in our searches, consider kindred goods where confliction might apply.

In class 21 which covers Electrical apparatus etc., there appears occasionally a mark for a hair waving machine or a manicuring machine.

In class 23, cutlery etc., there sometimes appears a trade-mark for razor blades, manicuring tools, massaging devices, etc. Class 44, covering Dental, Medical and Surgical appliances also sometimes contains a mark which has some connection with the Cosmetic, Soap and Toilet goods fields.

There is a limit which cannot be exceeded in such listings, but these classes will be hereinafter used for the trade-mark listings of these columns and the class will be given in Arabic numbers, not Roman as before, in order to keep the data short.

All this calls for another code listing. The original one given in the trade-mark Record is too short to give all the various goods involved.

Thus, the following specific list of goods will be used on all future listings:

Code For Classification of Goods in the Trade-Mark Record

GROUP A. BATH PREPARATIONS: Bath salts; bath oil; bubble bath; toilet soap; soap powder, soap chips; soap flakes.

GROUP B. PERFUMES: Colognes, toilet waters and perfumes, in liquid, powdered stick or cream form. Sachets.

GROUP C. COSMETICS: Lipstick; rouge; facepowders; mascara; eye make-up; cake make-up; creams, namely, vanishing, cold, foundation, hand, cleansing; lotions; astringents; dusting powder.

GROUP D. DEPILATORIES: Powters, creams and lotions for depilating and epilating; waxes or pads therefore.

GROUP E. MANICURING: Nail polish, powder, lacquer, cream white. Polish remover. Overcoat.

GROUP F. FOOT PREPARATIONS: Foot creams, foot powders; foot baths. Leg make-up.

GROUP G. PERMANENT WAVE SUPPLIES: Lotions, pads, fixatives for permanent waving of hair. Permanent hair straighteners. (but not permanent waving machines.)

GROUP H. HAIR PREPARATIONS: Tints; rinses; sets; pomades; brilliantine; lacquers; dyes; lotions; oils; bay rum; dandruff preparations; aids for falling or thinning hair; shampoo.

GROUP I. MENS' TOILET GOODS: Cologne; powder; after shave lotion; shaving cream; shaving soap; witch hazel; talcum powder.

GROUP K. TOOTH AND MOUTH PREPARATIONS: Toothpaste; tooth powder; mouth wash; denture cleaners; preparations for holding dentures in place.

GROUP M. MISCELLANEOUS: Of general interest but not classified.

GROUP R. INSTRUMENTS: Manicure devices; razor blades; razors; massage devices.

GROUP S. SUNTAN GOODS: Suntan oils; creams; powders; sunscreens.

GROUP T. INSECTICIDES: Athletes foot remedies. Insect repellents.

GROUP W. WAVING MACHINES (permanent): Permanent waving machines, devices and parts; electric driers and parts.

A typical listing therefore in future columns will be as follows:

Conquest—51—B—506,059
Dorothy Perkins, St. Louis, Mo.
Ser. July 22, 1946 D. U. June 19, 1932

It is suggested that you carefully remove the list of goods given above and file it away, since it is always helpful to know the general type of goods with which a mark is associated, if you are interested in the mark.

The exact goods can thereafter be found by examining the certificate of the trade-mark itself, by buying a printed copy from the Patent Office.

To sum up therefore, in future listings classes 4, 6, 21, 23, 44, 51, and 52 will be examined and referred to, the greatest number of course being in class 51 and 52, the class number being given in the usual position in the listings but in Arabic form.

The above given list of goods will also be hereinafter used.

It is hoped that by so doing, this column will serve an even greater need to keep the industries involved completely up to date with the trade-mark picture.

The following Trade-Marks were recently published in the Official Gazette of the United States Patent Office.

Amm-I-Dent—51—K—582,513
Amm-I-Dent, Inc., Jersey City, N. J.
Ser. July 26, 1949 D. U. Since 1947

Aristocrat—44—R—561,792
Aristocrat Manicuring Co., Reno, Nev. and Oakland, Cal.
Ser. July 21, 1948 D. U. May 3, 1948

Beforehand—51—C—570,475
Bristol-Myers Co., N. Y., N. Y.
Ser. Dec. 14, 1948 D. U. March 17, 1944

Camressal—51—C—570,244
Beautana Products, San Francisco, Cal.
Ser. Dec. 9, 1948 D. U. Oct. 19, 1948

Clover Farm—23—R—554,094
Clover Farm Stores Corp., DBA Clover Farm Stores, Cleveland, Ohio
Ser. April 8, 1948 D. U. Since 1882

Eye Stopper—51—C—571,774
Elizabeth Arden Sales Corp., N. Y., N.Y.
Ser. Jan. 7, 1949 D. U. Oct. 27, 1947

Furl—51—H—571,287
T. Noonan Sons Co., Boston, Mass.
Ser. Dec. 29, 1948 D. U. Dec. 17, 1948

Gold Medal—23—R—539,516
The Henkel-Clauss Co., Fremont, Ohio
Ser. Oct. 30, 1947 D. U. Since 1923

Lalon—51—C—561,509
Selby Drug Co., Inc., Clarksburg, W. Va.
Ser. July 15, 1948 D. U. June 1, 1948

Lucien Lelong—52—A—535,973
Lucien LeLong, Inc., Chicago, Ill.
Ser. Sept. 27, 1947 D. U. Dec. 1924

Mani-Bee—44—R—563,287
Herbert B. Snider, Miami Beach, Fla.
Ser. Aug. 12, 1948 D. U. March 17, 1933

P.S. for Pleasant Scents—51—B—561,258 (and des.)
Norma Mfg. Co., N. Y., N. Y.
Ser. July 13, 1948 D. U. Since Jan. 1, 1948

Swan—51—K—563,937
Katz Drug Co., Kansas City, Mo.
Ser. Aug. 24, 1948 D. U. Jan. 27, 1934

Terjolate—52—M—561,687
Rare Chemicals, Inc., Harrison, N. J.
Ser. July 19, 1948 D. U. May 1948

Valentine—51—H—566,732 (and des.)
Valentine Labs., Inc., Chicago, Ill.
Ser. Oct. 8, 1948 D. U. May 23, 1934

Act of 1946

The following Trade-Marks have been recently republished under the terms of the above (Lanham Act). No opposition can be filed against them but they are all subject to cancellation proceedings.

Adventure—51—B—354,597
Reg. Feb. 15, 1938 to Park & Tilford, N. Y., N. Y.
Repub. by registrant

Auxiliator—51—A—40,892
Reg. Aug. 11, 1903 to Paul Westphal, Inc., N. Y., N. Y.
Repub. by registrant

Denta-Mint—51—K—157,384
Reg. Aug. 1, 1922 to Sears, Roebuck & Co., Chicago, Ill.
Repub. by registrant

Kim—51—K—363,330
Reg. Dec. 20, 1938 to O. E. McKim, DBA McKim Dental Service, Port Chester, N. Y.
Repub. by registrant

Lusterator—51—H—343,142
Reg. Feb. 9, 1937 to Paul Westphal Inc., N. Y., N. Y.
Repub. by registrant

Norda—VI—BCD—204,933
Reg. Oct. 27, 1925 to Norda Essential Oil & Chemical Co., Inc., N. Y., N. Y.
Repub. by registrant

Park & Tilford—52—A—427,104
Reg. Jan. 28, 1947 to Park & Tilford, N. Y., N. Y.
Repub. by registrant

Park & Tilford—51—BCD—423,356
Reg. Aug. 27, 1946 to Park & Tilford, N. Y., N. Y.
Repub. by registrant

Satinette—51—CG—297,858
Reg. Oct. 4, 1932 to Godefroy Mfg. Co.
Repub. by Sears, Roebuck & Co., Chicago, Ill.

Sharp—51—BC—425,189
Reg. Nov. 5, 1946 to Park & Tilford, N. Y., N. Y.
Repub. by registrant

Sombrero—51—S—372,404
Reg. Oct. 31, 1939 to Ross & Rowe Inc., DBA Ross & Rowe Labs., N. Y., N. Y.
Repub. by registrant

Winx—51—C—173,052
Reg. Sept. 11, 1923 to Ross Co.,
Repub. by Park & Tilford, N. Y., N. Y.

New Products and New Packages

(Continued from page 168)

and unattached bottom which is designed to be seamed after the container is filled.

TUSSY COSMETIQUES is introducing its new Midnight series for Easter promotion. Midnight is a cosmetic and fragrance ensemble to complement the Spring fashions, combining a perfume, a cologne, a dusting powder, a rouge, a lipstick, and a mascara. Midnight Pink, the vibrant pink with lilac undertones is featured in the lipstick, the rouge, the creams and the powder. The mascara comes in Midnight Blue. As a fragrance, Midnight is a light, exotic scent.

TYREE'S Antiseptic Powder, a feminine hygiene product, is now available in a new glass package, brown in color, and distinguished by a permanent label of blue and white fused into the glass. This glass package is introduced in three sizes—2 oz., 4 ox., and 8 oz.—and is dessigned for cleanliness, practicability and efficiency.

THE UPJOHN COMPANY announces five new products: Diurnal-Penicillin, Fortified, for Aqueous Injection, for use in the treatment of infection caused by penicillin-susceptible organisms, whenever high initial blood levels, as well as repository action, are desired; Diurnal-Penicillin, Readimixed, Sterile Aqueous Suspension, a stable aqueous suspension of crystalline procaine penicillin G ready for immediate use; Myringacaine, an improved ear drop, possessing vasoconstrictor, as well as analgesic and hygroscopic properties; Depo-Heparin Sodium, 200 mg., and Depo-Heparin Sodium, 200 mg. with vasoconstrictors-repository forms of the normal tissue anticoagulant, heparin; and Pyrroxate Capsules, an antihistaminic cold combination.

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PHYSICAL
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- Good oil absorption
- Superior adherence
- Good fluffiness
- Perfume fixative
- Easy to blend and tint

CHEMICAL
- Essentially neutral
- Amphoteric
- Exceptional purity
- Deodorizes by neutralizing perspiration

PHYSIOLOGICAL
- Mildly astringent
- Screens out sunburn rays
- Bacteriostatic action
- Soothing
- Non-toxic
- Protective

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THE NEW JERSEY ZINC COMPANY

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Products distributed by

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Cleveland • San Francisco • Los Angeles

Status of the Ammoniated Dentifrices

(Continued from page 148)

Glycerine	**100.0 Gm.**
Alcohol	**40.0 Gm.**
Soluble saccharin	**1.0 Gm.**
Menthol	**0.4 Gm.**
Liquor amaranth (U.S.P.)	**2.0 Gm.**
Sodium benzoate	**1.0 Gm.**
Distilled water, to make	**1000.0 cc.**

With the use of these preparations, Kesel and his colleagues[13] observed a decided drop in the salivary lactobacillus counts within three weeks in those cases where conscientious cooperation could be obtained. It was observed that in some mouths the lactobacilli may completely disappear in a relatively short time. In others, following the initial drop, the l.a. counts may level off for several weeks and then again begin to fall. In still others, the counts may persist at levels that indicate caries activity. Variations in sugar consumption is often reflected in the reduced but persistent l.a. counts.

These workers call attention to the fact that the conduct and clinical evaluation of a caries control program are exceedingly difficult. They point out that the carious process is so slow and intermittent that an individual under treatment must be observed for 18 months, preferably two years, before any conclusions can be drawn regarding the effectiveness of the treatment. Because of such difficulties, these investigators are still unable to draw definite conclusions from their clinical studies.

A two-year check of the original group of 45 highly active is rather indicative, if not conclusive. Of this group, 33 went through two years of the brushing regime. Nineteen developed no new lesions. The remaining 14 subjects developed 20 lesions between them or about 1.5 cavities a piece in the two years. However, Kesel and his associates feel that these results are not significant because the group was too small and because it was not adequately controlled. They frankly acknowledge that they "do not know how much credit to give the brushing and how much to give the dentifrice."

Recognizing the difficulties and taking them into account, these investigators have embarked on a comprehensive, controlled study on 1,900 grade school children. This, they feel, should provide the answer to the effectiveness of oral hygiene and of a dentifrice containing ammonia and urea for the control of dental caries.

Despite this paucity of evidence of efficacy, tooth powders based on the formula developed by Kesel and his coworkers have been effectively merchandised and have attained high sales levels.[17] Nonetheless, because of American dental care habits,[18] the search has gone forward to develop a toothpaste based on 5 per cent dibasic ammonium phosphate and 3 per cent urea.

Before such products could be marketed a number of problems had to be solved. Undoubtedly the most pressing of these problems was the development of

methods for stabilizing the pastes and prevent the breakdown of the ammonium salt in the tube. Apparently the problem has been solved satisfactorily for several of these ammoniated toothpastes are on the market.

As might well be expected, considerable secrecy surrounds the work and formulations of the several manufacturers. However, Kramer[19] of the Victor Chemical Co. in Chicago has provided a working formula for making an ammoniated toothpaste based on the Illinois Foundation's combination. While it is difficult to say just how closely the following procedure compares with the commercial methods, Kramer points out that it will provide a good starting point for those interested in this type of product:

Tricalcium phosphate (Victor)	**26.67 per cent**
Glycerine	**45.40 " "**
Water	**15.40 " "**
Flavoring (peppermint)	**0.58 " "**
Gum tragacanth	**0.96 " "**
Saccharin	**0.10 " "**
Surface active agent (Nacconol LAL)	**2.89 " "**
Diammonium phosphate, Powd. FF	**5.00 " "**
Urea, 100-mesh	**3.00 " "**

Allow the gum to expand in the water at room temperature for 30 minutes, add the glycerine and mix well. Slowly add the tricalcium phosphate to this solution and mix thoroughly. Mix in the remaining constituents in the following order: Saccharin, flavoring, diammonium phosphate, urea and surface active agent. After adding the surface active agent, mix no longer than necessary to obtain complete distribution.

In a recent communication, Kesel[20] stated that tests had been developed for checking the properties of ammoniated toothpastes. If the products pass these tests they may be approved by the University of Illinois Foundation. The tests[16] are designed to determine the stability of the paste over an accelerated aging period; the acceleration being produced by storing the paste in an oven at 45°C. for six weeks. The pastes are also checked *in vitro* on their ability to destroy *Lactobacillus acidophilus* and inhibit lactic acid production. Kesel reports that several companies have submitted pastes that have passed these tests. He notes, however, that as of September 30, 1949, there have been no publications concerning these pastes. As far as can be determined at this writing, no reports of clinical studies based on the use of these ammoniated toothpastes have appeared in the literature.

It should be mentioned that the formula of the University of Illinois Foundation, which is based on the use of 5 per cent dibasic ammonium phosphate and 3 per cent urea, is covered under a pending patent. Quite a number of companies have been licensed to produce dentifrice under this patent application.[18]

Although other factors enter the picture, the chief

(*Continued on page 214*)

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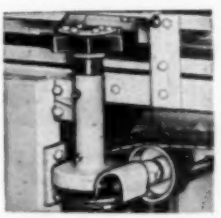

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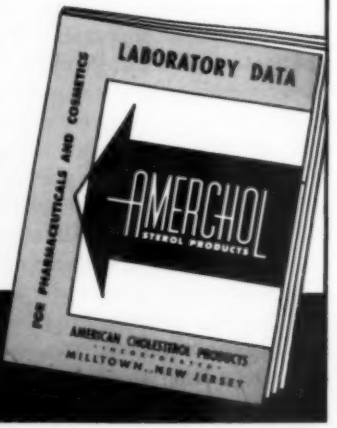

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Compounder's Corner

Hydrophylic Beeswax Derivatives

In a talk before the December 8, 1949 meeting of the Society of Cosmetic Chemists, P. J. Carter and W. C. Griffin of the Atlas Powder Company, Wilmington, Del. described new types of beeswax derivatives that are hydrophylic in character. These derivatives make it possible to produce neutral cold creams without soap. Creams produced with the new non-ionic derivatives are not only neutral, as compared with the fairly high alkalinity of most commercial creams, but also liquefy very well on the skin by comparison with many popular commercial creams, a large percentage of which are relatively non-liquefying. Moreover, the beeswax derivative creams are soft in consistency, and "peak" very well. Excellent results are achieved with water content as high as 30 per cent to 50 per cent, compared with a water content of 10 per cent to 35 per cent in most commercial creams. Stability is equal to or better than that of most popular creams.

Seven principal derivatives in a series were announced. While all of these are hydrophilic, three are more on the lipophilic side. The more lipophilic emulsifiers are designated as G-1702, G-1704 and G-1706, while the more hydrophilic are G-1725, G-1726, G-1727 and G-1734. Chemically, they are a combination of polyoxyethylene sorbitol and beeswax. They resemble beeswax in color, odor and texture. All are surface active, and act as emulsifiers or co-emulsifiers in the preparation of various cosmetic products.

The following formula is for a soap-free cold cream, differing only slightly in preparation from ordinary beeswax-borax creams in which the water phase is added to the oil phase. Best results are obtained with this formula when the oil phase, including the emulsifier and the beeswax derivative, are melted and mixed, and then added to hot water.

Mineral Oil	**50 per cent**
Beeswax	**7 " "**
Tween 40 (polyoxyethylene sorbitan monopalmitate	**2 " "**
G-1726	**8 " "**
Water	**33 " "**
Preservative and perfume	**Sufficient**

The formula below shows how the beeswax derivatives may be used in preparing a typical cold cream without beeswax.

Mineral oil	**50 per cent**
G-1704	**12 " "**
G-1726	**3 " "**
Water	**35 " "**
Preservative and perfume	**Sufficient**

The mineral oil and beeswax derivatives are mixed and heated to 70°C. The water phase is then added slowly, with thorough agitation. Continue stirring while cooling. Perfume at 50° C. and pour.

While the above formulas show the use of the new emulsifiers to avoid disadvantages of soap, they may also be used in preparing exceptionally smooth and stable creams of the soap type, emollient creams, lotions and hair dressings.

Electric Razor After-Shave Cream Lotion

In a review of toiletries for use with electric shavers, appearing in *Schimmel Briefs* for December, 1949, it is noted astringent lotions applied before use of the electric shaver have a drying effect on the skin and the action of the shaver may irritate the skin. Consequently the aftershave lotion should be somewhat soothing and emollient rather than stimulating. A liquid cream along the lines of the formula below should serve the purpose.

Glyceryl monostearate (self-emulsifying)	**3.5**
White oleic acid	**2.0**
Glycerine	**5.0**
Triethanolamine	**0.8**
Menthol	**0.1**
Water	**81.6**
Alcohol	**7.0**
Perfume and preservative	**sufficient**

Melt the glyceryl monostearate with the oleic acid. Heat together the glycerine triethanolamine, preservative and water to approximately the same temperature and add to the first mixture with high speed stirring. When the temperature drops to 50°, add the menthol and perfume dissolved in alcohol. Continue stirring until the emulsion is cool.

Anhydrous Mixtures for Making Ointments

It is remarked by V. N. Bhatia and L. C. Zopf (*J. Am. Pharm. Assoc.*, Pract. Ed. 10:410, 1949) that although hydrophilic bases have a number of advantages over bases of other types and are rapidly achieving a great deal of popularity, they have two definite disadvantages: (1) a tendency toward evaporation during storage and (2) a susceptibility to mould growth. Hence, they set out to prepare anhydrous emulsifiable solid-mixtures, which could be used for the extemporaneous preparation of hydrophilic ointment bases by the simple addition of water, thus eliminating the need for the prolonged storage of these bases. This would also facilitate the shipping and insure a more uniform consistency of finished prescriptions, as well as minimizing the chances of developing mould growth. The various solid-mixtures, as well as the ointment bases prepared from them, were subjected to stability and compatibility tests, and the following two are presented as the most satisfactory:

Solid-Mixture A

Stearyl alcohol	**53.0 Gm.**
Cetyl alcohol	**7.0 "**
Polyethylene Glycol 400*	**38.6 "**
Sodium lauryl sulfate	**1.4 "**

Solid-Mixture B

Stearyl alcohol	**64.7 Gm.**
Cetyl alcohol	**8.6 "**
Carbowax 1000 Monostearate*	**13.0 "**
Carbowax 1540*	**8.7 "**
Anhydrous lanolin	**5.0 "**

* Products of Carbide and Carbon Chemical Corporation, New York.

To prepare the mixtures the ingredients are melted together and the mixture is stirred vigorously until solidification is complete. Only vigorous stirring will yield a uniform product, granular in form. The solid-mixtures are white to yellowish-white coarsely granular powders, slightly soluble in water but completely soluble in benzene and alcohol. Their melting points range from 56°C. to 68°C.

To prepare the ointments the solid mixture is melted by heating at 70-75°C. and water at the same temperature is added to it. The whole should then be stirred until the emulsion which is

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formed begins to solidify and cools to 40°C. The amount of water to be added varies for each base. Thus to prepare Base A from solid-mixture A, 50 cc. of water are added to 50 Gm. of the melted solid-mixture. To prepare Base B from solid-mixture B, 60 cc. of water are added to 40 Gm. of melted solid-mixture B. The bases thus prepared are white oil-in-water emulsions of ointment-like consistency, nongreasy and washable with water. They are stable up to 55-60°C.

These solid-mixtures should prove very useful for they not only reduce the possibilities of dehydration and mould growth in hydrophilic bases, but would also facilitate their storage and shipping; in addition, the ointment bases made from these two solid-mixtures are heat-stable and compatible with a large number of drugs. The use of solid-mixture A is recommended when a low systemic absorption is desired. This solid-mixture would be more useful if a high percentage of dry powders are to be incorporated in the base, as the base prepared from solid-mixture B was found to harden under these conditions. Solid-mixture B, on the other hand, would be useful if a greater systemic absorption is desired and when salicylates are to be incorporated as it is comparatively more stable in their presence.

Emollient Substances

In his discussion in *Soap, Perfumery and Cosmetics* (22:1124, 1949) D. N. Burton presents interesting views on emollient substances and their fundamental importance in cosmetics. He says that materials exerting an emollient action on the skin can be divided into two convenient groups: (a) water-soluble, and (b) oil-soluble. The members of group (a) in everyday use are di-, tri-, and polyhydric alcohols such as propylene glycol, glycerol and sorbitol. Group (b) is characterized by wool wax (lanolin), and includes, for example, wool wax alcohols, butyl stearate, sorbitan monoleate, cholesterol and cetyl alcohol.

Substances in the first group are humectants, but the oil-soluble group of substances are used for similar purposes; namely, to suppress water evaporation from the skin. Both groups, but especially the oil-soluble group substances, show water-in-oil emulsifying action. In addition, the oil-soluble group of substances often serve as coupling agents and plasticizers for immiscible oils, oil-wax mixtures and the like. Substances in this class also contain polar groups which give them, and their mixtures with inert materials, such characteristic properties as tenacity to the skin surface and possibly permeation of the epidermis.

In Burton's opinion, the most evident inference from these facts is that emollient action is basically a question of conserving the water content of the skin. That it is not merely a matter of waterproofing is plain from the effects shown by mineral oils; and although a greasy layer of petroleum jelly does afford some protection as a physical barrier against inclement weather and detergents, it has no softening or plasticizing effect on the skin, and does not improve the condition of dry skin: i.e. it does not replace sebum. The fact that the second group of emollients are oil soluble is not a criterion of emollient action, as this action is also characteristic of the water-soluble emollients, which cannot be said to have a waterproofing action on the skin. The important difference is that the oil-soluble group materials are more tenacious and lasting in effect, being resistant to weather and perspiration, and to some extent to detergents.

With these observations in mind, Burton presents his views on the characteristics of an ideal emollient cream. These are as follows: (1) It should exert a pronounced and lasting emollient effect. (2) It should be sterile or antiseptic without being irritant to cracked or sore skin. (3) It should have a pleasing appearance, smooth and normally white. (4) It should have a soft texture, a non-greasy feel, and should spread easily and vanish on to the skin. (5) It should be an oil-in-water emulsion, suitable for application to dry skin. (6) In the case of a hand cream, the dried emulsion should not reconstitute easily, i.e. the oil phase should not form a spontaneous emulsion.

Antiseptic for Vitamin C Solutions

According to a note in the *Bulletin of the American Society of Hospital Pharmacists* (6:118, 1949) it has been reported that chlorobutanol is not suitable as an antiseptic for solutions of vitamin C because it reacts directly with l-ascorbic acid to form biologically inactive compounds. Phenol, or the methyl and propyl esters of p-hydroxybenzoic acid ("Nipagin," "Nipasol," etc.) may be used as antiseptics in vitamin C solutions. The methyl and propyl esters should be used together. e.g.

Methyl p-hydroxybenzoate	**1.8 Gm.**
Propyl p-hydroxybenzoate	**0.2 Gm.**
Vitamin C solution (10%), to make	**1000.0 cc.**

Dissolve the esters by agitation in hot water prior to adding the ascorbic acid.

Sodium Sulphoricinoleate in Dentifrices

According to R. Rossi (*Alchimist* 3:173, 1949) sodium sulphoricinoleate, which has the property of removing scale from the teeth, has been used for some years in dentifrices. It is prepared by slowly treating pure ricinoleic acid with concentrated sulphuric acid and then neutralizing with sodium hydroxide. In his opinion, a dentifrice containing perfectly prepared sodium sulphoricinoleate and a good potassium soap of cocoa butter is very suitable for keeping teeth and gums in good health. An example of such a dentifrice is:

Potassium soap of cocoa butter (powder)	**3 per cent**
Sodium sulphoricinoleate	**2 per cent**
Glycerine	**30 " "**
Precipitated calcium carbonate	**60 " "**
Essences, water and color	**sufficient**

Another formula without soap is:

Starch glycerolate	**50 per cent**
Sodium sulphoricinoleate	**10 " "**
Colloidal kaolin	**40 " "**
Essence, water and color	**sufficient**

Rossi states that the following is a formula for a dentifrice which is being pushed in this country:

Soap powder, U.S.P.	**5 per cent**
Sodium sulphoricinoleate	**5 " "**
Precipitated calcium carbonate	**45 " "**
Basic magnesium carbonate (magnesia alba)	**25 " "**
Sodium hexametaphosphate	**2 " "**
Essence, water and color	**sufficient**

He notes that this product has the property of eliminating scale after a few applications. This property is not only due to the presence of sulphoricinoleate, but also to the alkaline hexametaphosphate, a product capable of dissolving insoluble calcium salts or of dispersing them finely.

Advancing Therapy

New Drug for Treating Arthritis

Many drugs have been advocated for the treatment of arthritis during the past several decades. Most recently, the introduction of Compound E and ACTH has attracted wide attention. While these agents have produced dramatic results in a wide variety of arthritic conditions, they are not available except in minute quantity for experimental use. Hence the interest in a new drug, glucuronolactone, which is being made available in tablet form for oral administration under the trade name "Glucurone" (Commercial Solvents Corp., New York City). Glucuronolactone represents a new approach to antiarthritic therapy in that treatment is along physiologic lines in which normal body functions are restored by replacing a deficiency in the body encountered in these diseases. Glucuronolactone overcomes the discomfort and deformity of arthritis through direct attack on the factors responsible for the arthritic process. It exerts little if any analgesic action; clinical improvement is produced through its influence upon the metabolism of bone, tendons, and cartilage.

In the November, 1949 issue of the *Journal-Lancet*, J. H. Hodos, H. Brandon and J. F. Maloney reported the results obtained with the use of glucuronolactone on 50 cases of rheumatic diseases. Nine showed complete remission, 19 showed major improvements, 14 minor improvement, while 8 cases remained unimproved. The cases which responded best were the comparatively early cases of osteoarthritis. Cases associated with sciatica showed dramatic results, and this appears to be a most promising field for the use of this drug.

Wettable DDT in Pediculosis

For the past two years, G. E. Morris (*New England J. Med.* 241:742, 1949) has been using a "wettable DDT" with "unprecedented success" in the treatment of pediculosis. The wettable DDT that has been used is the type that is available through farm and seed stores and many gasoline stations. It is used by farmers, horticulturists, and others for the control of animal parasites of plant life. It is a fine, silky-smooth, white, fluffy powder, available in strength of 55 per cent active ingredient. When mixed with water, it forms, on agitation, a soapy emulsion that is very effective in the eradication of lice.

The patient is advised to wet the parts affected with water that is, the scalp hair in pediculosis capitis, the pubic and axillary hair in pediculosis pubis and the clothing in pediculosis corporis—and then to make a lather with the wettable DDT powder. The lather is allowed to stay on the parts for fifteen minutes and then is washed out with water. One such treatment will kill all lice, but will not affect the nits or ova that contain unhatched lice. Since the remaining nits will hatch into live lice within two weeks, it is necessary to repeat this fifteen-minute treatment once weekly for three weeks. Itching is relieved immediately after the first treatment and no dermatitis has resulted from this exposure to DDT, nor have there been any toxic metabolic manifestations. It is a simple procedure and is especially time and labor saving.

Aureomycin for Syphilis

The studies made by R. R. Willcox (*Brit. Med. J.* 2:1076, 1949) indicate that the antibiotic, aureomycin, has a powerful action against the organism of syphilis. In his investigations nine negro patients with early syphilis (two with seronegative primary syphilis, two with seropositive primary syphilis, and five with secondary syphilis) have been treated orally with aureomycin in doses of 750 to 1,500 mg. over 24 to 48 hours.

In six no *T. pallidum* was recovered at 24 hours, but in three the dark fields were positive at that time. In all, however, the dark fields were negative at 48 hours, and remained so daily for the periods over which observation was possible (3 to 17 days). Circumstances unfortunately prevented further observation.

Healing was most pronounced in the lesions of secondary syphilis, and in these the response was as dramatic as that obtained with penicillin, perhaps even more so. One case is known to have relapsed. It is very unlikely that the small doses given were curative, although 250 mg. given four times a day for a week might well be. In view of these observations, Willcox feels that the use of aureomycin opens up a new field of therapeutic investigation.

Of kindred interest is the concurrent report of J. Rodriquez and his associates (*J. A. M. A.* 141:771, 1949). On March 1, 1941, they initiated a study at the Chicago Intensive Treatment Center concerning aureomycin and its effect in early infectious dark field-positive syphilis. Twenty-seven patients had been treated by May 5, 1949. All patients in the study had dark field-positive lesions. The disease of 21 patients was diagnosed as secondary syphilis, of 3 as seropositive primary and of 3 as seronegative primary. The age range for the group was 17 through 39 years. An initial oral priming dose of 2 Gm. (eight capsules of 250 mg. each) was given, and the dose was repeated four hours later; then 1 Gm. was given every four hours day and night until a total of 70 Gm. had been administered in a little over eleven days.

Following treatment under these conditions, it was concluded that aureomycin causes an initial satisfactory decline in the serologic titer, rids syphilis lesions of surface spirochetes in an average time of 39 hours and, administered orally in the high dosage schedule outlined, causes mild to moderate degree of gastrointestinal disturbance in almost 100 per cent of the patients. The gastrointestinal disturbance seemed to occur most frequently on the second through the fifth days of treatment. Aluminum hydroxide gel given prior to each dose of aureomycin helped to minimize this type of reaction.

Enteric-Coated Ammonium Chloride for Muscular Cramps

Spontaneous muscular cramps are a common condition in many people, but there have been few reports on the means of alleviating this unpleasant and even debilitating condition. One approach to this problem is offered by J. J. Sampson (*Amer. Proctitioner* 4:205, 1949) through the use of enteric-coated tablets containing 0.5 Gm. am-

monium chloride. From the observations made on about fifty patients, he found that ammonium chloride in enteric-coated tablets given in 1 Gm. doses three times during the afternoon and evening is about 75 per cent effective in the prevention of the spontaneous nocturnal cramps of the legs commonly observed, especially in elderly people. The salt is administered for 2 to 4 days and then discontinued until cramps recur. When effective, intervals of three to 28 days without cramps may follow a cycle of treatment.

Sampson points out that although no ill effect has been noted in the patients in this series, it may be assumed that serious acidosis could be produced in patients with renal disease or in those in whom impending acidosis exists at the time therapy is contemplated.

Plastic Thigh Bone

In their report in the October 29, 1949 issue of the *Lancet*, H. J. Seddon and J. T. Scales describe how a substitute thigh bone, carved from a block of polyethylene plastic, has been successfully substituted in the leg of a 12-year-old boy for the natural bone which had to be removed because of disease (chondromatous dysplasia). The polyethylene plastic was chosen because of its stability and high resistance to chemical change, its considerable toughness and resistance to fatigue strain and its non-wettable surface which living tissue does not stick to. Its safety for use in the body had already been learned through animal experiments. The plastic replacement was carved to meet precise measurements that had been obtained by means of X-rays. Channels were made in it so that tendons from hip and other muscles could be slipped through, to attach the substitute thigh bone to muscles. This gave some chance of its being well controlled by the more important muscle-groups. A good fit of the head of the thigh bone to the hip was obtained by filing its surface after a preliminary fitting during the operation. Less than two months after the operation, the stump had become normal, the boy had been fitted for an artificial leg and was walking on a temporary "pylon."

Inhalation of Penicillin Dust

From experience based on over 1,000 patients, L. R. Krasno and P. S. Rhoads (*Am. Pract.* 3:649, 1949) have established the usefulness of treatment by inhalation of penicillin dust in all bacterial infections of the upper part of the respiratory tract and those of the trachea, bronchi and bronchioles, including bronchiectasis. It is helpful in preventing bacterial complications of the common cold and in controlling infection of the upper part of the respiratory tract which may accompany pneumonia, but it should never be used as the sole bacteriostatic agent in pneumonia to the exclusion of parenterally introduced penicillin or sulfonamide drugs. In some instances penicillin dust inhalation is the only treatment required, but often this treatment should be used in conjunction with one or more of the commonly accepted means of combating infection of the upper part of the respiratory tract, such as vasoconstrictors, bronchodilators, antihistaminics, removal of allergens and surgical drainage. For deep seated infections with severe systemic manifestations, it should be used in conjunction with parenterally introduced penicillin or sulfonamide drugs. Allergic reactions resulting from this method of penicillin administration are, except in rare instances, limited to the mucous membranes of the mouth and throat and—if the need of local penicillin concentrations is great—do not necessarily constitute a contraindication to its continued use. There has been no evidence that penicillin dust creates penicillin fastness in micro-organisms if adequate treatment is given. Patients with bronchiectasis should receive penicillin dust over long periods and in dosage which keeps them symptom free.

Aureomycin for Herpes Zoster

Recently some beneficial effects have been reported for aureomycin and chloromycetin in certain skin diseases that are thought to be due to viral agents. Since herpes zoster is in this group, M. Finland and his associates (*New England J. Med.* 241:1037, 1949) decided to try aureomycin in the treatment of this skin disease. Findings in 24 cases are given in some detail and the results are encouraging. Aureomycin appeared to halt the progress of this disease and to bring about rapid healing of the lesions. Vesicles dried up and became encrusted in the first two to four days after treatment was started and proceeded to heal rapidly and completely thereafter. In occasional patients new lesions appeared during the first day of treatment but not later unless the therapy was interrupted. The pain accompanying the acute lesions also subsided after the first day of therapy. Post-herpetic pain rarely occurred in the patients whose treatment was begun early and was maintained in adequate dosage, but it was not prevented in the patients in whom treatment was begun more than two weeks after the first appearance of the lesions.

The oral dosage found to be effective in these cases was 4 Gm. daily (1 Gm. after each meal and at bedtime) for two to four days, or until the lesions were well dried and encrusted. Half this dose is given for an additional three to five days and may also be used throughout when the larger doses are not tolerated. Intravenous doses of 500 mg. daily likewise appear to be effective and may be used if the oral dose is not well tolerated. The optimum intravenous dosage, however, was not ascertained.

Combined Therapy for Infantile Gastro-Enteritis

In the opinion of C. Z. Neumann (*Brit. Med. J.* 2:132, 1949) the symptomatology of infantile gastro-enteritis can be explained, at least in part, as a manifestation of histamine intoxication. The beneficial action of various therapeutic measures can be considered as being due to the removal or neutralization of histamine by rapid evacuation, by adsorption, or through antihistamines. Sulpha drugs, by acting on pathogenic organisms, may prevent the formation of histamine. These measures often fail when the histamine intoxication is severe unless they destroy the histamine *in situ* or prevent the histamine from acting on the intestinal vascular plexus; only antihistamines can do this.

This view is based on data obtained with several groups of patients. Thus starting from the assumption that histamine was the immediate cause of the fatal dehydration found in gastro-enteritis and was responsible for many of the toxic manifestations, it was decided to treat a number of cases with an antihistamine ("Benadryl" in this series) combined later with a sulpha derivative. Moderately severe and severe cases only were selected. Although, when the antihistamine was given to 24 infants, a rapid diminution in the number of stools was observed the fever was often uninfluenced and the condition of some patients deteriorated when the drug was stopped. When a sulpha derivative was concurrently administered rapid and permanent improvement set in. In another series of 40 cases, combined therapy (Sulphamezathine and Benadryl) caused a rapid decrease in the number of stools and a very quick disappearance of the toxemic symptoms, such as vomiting, prostration, dysprea and tachycardia.

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Industry's Books

Advanced Organic Chemistry, by G. W. Wheland, Professor of Chemistry, University of Chicago, Second Ed., 799 pp., John Wiley & Sons, New York, $8.

This book systematizes the facts of organic chemistry, correlating them with each other and with fundamental theory. The primary and unifying principle of the book is the structural theory in its broadest sense, since this one theory underlies the whole of organic chemistry. Throughout the book considerable stress is laid upon the theoretical and empirical generalizations that have been found most widely applicable, but the treatment is kept as concrete and precise as possible. Special features of the book include: 1. Information regarding the kinetics and mechanisms of important reactions. 2. A minimum use of the letter R. 3. Serious consideration given to the problem of providing clear, logical, and consistent definitions of the technical terms used. 4. Complete references to the original literature, comprehensive review articles and monographs.

Handbook of Materia Medica, Toxicology, and Pharmacology, by Forrest Ramon Davison, B.A., M.Sc., Ph.D., Consultant and Toxicologist, Minneapolis, Minnesota, Fourth Ed., 730 pp., Illus., The C. V. Mosby Co., St. Louis, $8.50.

The aim of this revision is to present again that information about drugs essential for the student of medicine and the practicing physician; to present sufficient information about the practical use of drugs to assist the student in the transition from his preclinical years to clinical studies. A characteristic of American medicine has been the constant search for new medicines and the development of new uses and methods for older remedies. Significant new remedies are discussed, including polymyxin, aureomycin, antihistamines, folic acid, rutin, BAL, antithyroid drugs, newer antimalarials, "nitrogen mustards," digitoxin, blood fractions, radioactive phosphorus, and many more. New information on hormones and also on vitamins is given.

A Manual of the Penicillia, by Kenneth B. Raper, Principal Microbiologist, Fermentation Division, Northern Regional Research Laboratory, Bureau of Agricultural and Industrial Chemistry, U. S. Department of Agriculture, Charles Thom, Collaborator, U. S. Department of Agriculture, and Dorothy I. Fennel, Assistant Microbiologist, National Science Fund and Cooperative Agent, U. S. Department of Agriculture, 875 pp., Illus., The Williams & Wilkins Co., Baltimore, $12.

Until antibiotic penicillin was brought to the United States in 1941, the study of the strains of the Penicillia was purely academic, and limited to less than a dozen laboratories. Since then, hundreds of chemists, bacteriologists, and pharmacologists have worked on this matter of great biochemical and industrial importance. It was necessary to re-study the entire genus and a complete manual such as this one was urgently needed. This manual is designed as a means of identiyfing Penicillia in the laboratory with a minimum of misunderstanding in the interpretation of species. It is to be used also as a guide to the accumulated literature concerning these molds. Some 4000 strains have been examined in the preparation for this volume. Groups of strains having consistent morphology and showing related biochemical activities have been arranged in series. Within each series, recognized species are arranged in logical sequence and described in such a way as to lead to a definite identification of material within the scope of the usual range of variants. The volume is well illustrated and enhanced by the addition of ten plates in full color.

Aids to Pharmaceutical Latin, by George Edward Trease, B. Pharm., Ph.C., Lecturer on Pharmacognosy in the University College of Nottingham, Second Ed., 170 pp., Pocket Size, Bailliere, Tindall and Cox, London, $1.75.

The object of this book is to place in the hands of pharmaceutical and medical students a concise Latin Grammar specially adapted to their needs. A number of minor changes have been made in the present edition, and some autograph prescriptions included for practice in reading.

Helpful Hints to the Diabetic, by William S. Collens, B.S., M.D., Chief or the Diabetic Clinic, Consultant in Metabolic Diseases, Rockaway Beach Hospital, and Louis C. Boas, A.B., M.D., Chief of the Diabetic Clinic, Associate Visiting Physician, Greenpoint Hospital, 135 pp., Illus., Charles C. Thomas, Publisher, Springfield, Ill.

The purpose of this book is to assist the diabetic in the management of his condition. This work supplies the reader with all the practical information he needs to understand the disease from which he is suffering. This should give him the equipment necessary to cooperate intelligently with his physician. The patient is told in simple terms what diabetes is, now to prepare his diet, the proper technique in the administration of insulin, and simple laboratory procedures that he needs to know to tell him something about the complications of this disease. This book will also guide the reader through the forest of misinformation to which he is continuously exposed by quacks, pseudo-scientific newspaper articles and well meaning neighbors. The diabetic will be greatly benefited by the material presented in this book.

Textbook of Bacteriology (Eleventh Ed. of Muir & Ritchie's "Manual"), by C. N. Browning, M.D., LL.D., Gardiner Professor of Bacteriology, University of Glasgow, and T. J. Mackie, C.B.E., M.D., Professor of Bacteriology, University of Edinburgh, 907 pp., Oxford University Press, New York, $12.75.

The first edition of Muir and Ritchie's "Manual of Bacteriology" was published fifty-one years ago and it is eleven years since the last, a further edition having been delayed by the circumstances of the War. In this period the number and extent of the advances in almost all branches of the science have been so great that it has proved impossible to preserve the original treatment of the subject and at the same time to retain the old format. Accordingly, the whole book has been recast and set on a larger page. The opportunity has been taken to rewrite as well as to rearrange the

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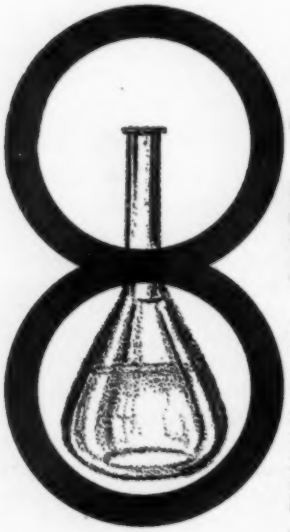

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matter, so that practically all the chapters are new in greater part. At the same time it has been a chief object of the authors to preserve those characters to which the book owed its great popularity. Thus in each section has been given a critical survey of knowledge up-to-date, along with an account of the basic information yielded by laboratory and clinical investigations. While emphasis is laid principally on those micro-organisms responsible for diseases in man, the infections of animals also receive attention, owing to the two being so closely associated. As hitherto, fungi and protozoa are included along with the pathogenic bacteria and viruses, because they all show great similarities in the pathological changes produced; also similar methods are employed for their investigation. The increasing importance of Viruses has necessitated a great extension of the space allotted to these agents. The chapter on Chemotherapy also has been enlarged so as to include a fuller discussion of the biological aspects of the subject.

Vitaminology, The Chemistry and Function of the Vitamins, by Walter H. Eddy, Ph.D., Emeritus Professor of Physiological Chemistry, Teachers College, Columbia University and Scientific Director, American Chlorophyll Inc., 365 pp., The Williams & Wilkins Co., Baltimore, $6.

For the first time in a single volume, this monograph covers the vitamin field in an up to date manner. Designed primarily for students, the text is thoroughly documented with references to the articles that are pertinent to each function of the vitamin cited. The chapters on the individual vitamins are divided into three sections: what the vitamin does; its place in the chemical field; and its value in human and domestic animal nutrition. This is a text for the use of teachers in biochemistry and for the student who wishes to have a comprehensive presentation of the whole field of vitaminology in a single volume.

Manual of Pharmaceutical Law, by William Pettit, Lecturer in Pharmaceutical Jurisprudence, University of Pittsburgh, 170 pp., The Macmillan Co., New York, $2.75.

All those regulations which affect the practice of pharmacy are here explained and interpreted in the light of authentic and well chosen cases which have arisen in the past. Particular attention is paid to regulations on narcotics and poisons and to the pharmacists liability for negligence. Illustrative cases with regard to pharmacists practicing medicine, ownership of prescriptions, and non-mailable matter are included, and there are adequate discussions on price fixing, illegal contracts, and insurance. An explanation of the three main types of business units used in the conduct of pharmacies in the United States is also included. The appendix includes verbatim copies of those federal laws which govern pharmacy—The Uniform Narcotic Drug Act; Food, Drug, and Cosmetic Act; Federal Narcotic Law, Federal Public Health Service Act; and the Postal Law.

Essentials of Gynecology by Leo Brady, M.D., Assistant Professor of Gynecology, Johns Hopkins University, Ethna Louise Kurtz, R.N., Formerly, Head Nurse, Brady Urological Institute, Johns Hopkins Hospital, and Eileen McLaughlin, B.S., Instructor and Supervisor, Gynecological Nursing, Johns Hopkins Hospital, Second Ed., 256 pp., The Macmillan Co., New York, $3.

Eight years have elapsed since the First Edition of this book was published. During this time important advances have been made in the treatment of gynecological conditions, and there have been changes in the technique of nursing procedures. Moreover, the methods of preparing supplies for the operating rooms in the Johns Hopkins Hospital have been considerably altered. For these reasons, the authors have felt it advisable to revise thoroughly this work, bringing the text as nearly as possible up to the minute. Contents: 1. Anatomy. 2. Physiology of the Female Reproductive Organs. 3. The Gynecological History and Examination. 4. Gynecological Symptoms and Their Importance. 5. The Gynecological Infections. 6. Uterine Displacements and Obstetrical Injuries. 7. Ectopic or Extra-uterine Pregnancy. 8. Sterility. 9. Gynecological Cysts and Tumors. 10. Gynecological Surgery. 11. The Equipment and Supplies in the Gynecological Operating Room. 12. The Student Nurse in the Operating Room. 13. Postoperative Treatment. 14. Postoperative Complications. 15. Female Urology. 16. Radiation Therapy in Gynecology. Index.

Praktikum des Modernen Parfumeurs, by Dr. Paul Jellinek, Chief Chemist of Polak's Frutal Works in Amersfoort, Published by Urgan & Schwarzenberg, 239 pp., S. 56.

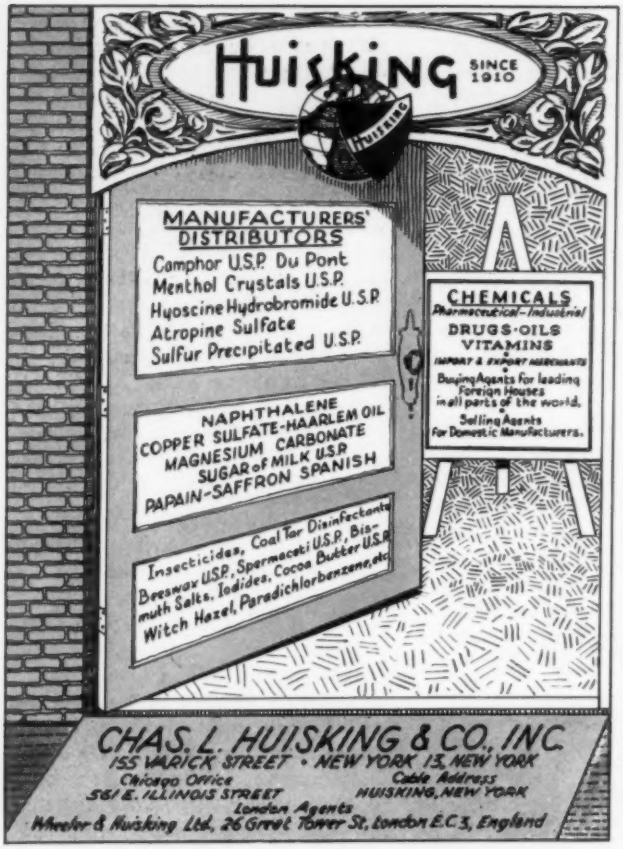
This is an authoritative work on the practical aspects of perfumery and is a welcome addition to the literature in this field. It should serve as a guide to beginners as well as a valuable reference work to experienced perfumers who may endeavor to improve, and to create, new and better compositions. The book is divided into four main parts. Part I gives a general introduction and insight into the use of materials; the second part deals with the perfumery of cosmetics, including brilliantines, lipsticks, face powder, creams, hair lotions, razor preparations, cosmetic soaps, and ends with a discussion of the use of various raw materials in their preparation. Part III deals with the perfuming of toilet soaps, and the last part, Part IV, deals with perfumes, cosmetics, and psychology.

Atomic Medicine, Edited by Charles F. Behrens, M.D., Captain, M.C., U. S. Navy, Director, Atomic Defense Division, Bureau of Medicine and Surgery, Navy Department, 416 pp., Thomas Nelson & Sons, New York. $7.50.

The relentless tide of human events and scientific progress has engulfed the medical profession in a flood of problems, largely unfamiliar, related to the use of atomic energy. Such answers as we have for these problems are widely scattered in textbooks on nuclear physics, physical chemistry, radiation biology and therapy; also in countless individual articles in periodicals and special publications. This work is intended to assemble such of this material as is appropriate to the needs of the medical and allied professions, and to present it as clearly as possible, steering a middle course between a presentation suitable only to specialists in the fields of radiation biology and physics and one unduly elementary. A number of authors have contributed chapters and since the subjects are closely related, there is unavoidably some overlapping. This is felt to be an advantage rather than the opposite, since the approach and implications will be different in each presentation.

Pamphlets

The American Management Association, New York, just published the following three pamphlets on intensifying sales efforts through market research planning, revitalizing the sales force and utilizing new techniques in sales promotion. 1. Economic Factors in Market Planning (Marketing Series No. 77, 75c. 2. Sharpening Sales Efforts Through Market Research (Marketing Series No. 75, 50c. 3. Revitalizing Your Sales Force (Marketing Series No. 76, 50c.



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Status of the Ammoniated Dentifrices

(*Continued from page 203*)

differences between the Illinois Foundation formula and that of the Eastern Graduate Research Foundation lies in the percentage of urea. The former may be described as a "low" urea formula, while the latter can be considered as containing "high" urea proportions.

As was pointed out recently by Henschel[21] the Eastern Graduate Research Foundation, the use of urea in dentifrices is probably not a passing enthusiasm since its antibiotic and bactericidal properties have been proved for half a century and known historically for several thousand years. Its physical properties, he observed, coincide with the need for an inexpensive anti-caries substance that can be used in quantities sufficient to penetrate into the "protected," stagnant areas of the mouth where cavities form. In the mouth, urea acts as a protein denaturant, inhibits acid-forming enzymes and decreases the rate of acid formation.

In 1940, Stephan[22] suggested that the ammonia nitrogen in the saliva of caries—immune persons was produced by the action of the enzyme, urease, on the urea normally present in the mouth. He advocated the use of urea as a mouth rinse for caries control. His recommendation was based not only on the fact that ammonia is liberated from urea, but also on the observation that urea inactivates carbohydrate—degrading enzyme systems. Subsequently, he[23] showed that a sufficiently strong solution of synthetic urea (carbamide), used for about four minutes, raises the pH of a dental plaque from a highly acid level to well over onto the alkaline side and maintains this value (as high as pH 9) for several hours.

In his earlier studies, Henchel[24] experimented with formulas containing as much as 66 per cent of carbamide. However, the formula which was eventually developed and used in clinical studies[25] consists of:

Carbamide	**22.5 per cent**
Dibasic ammonium phosphate	**5.0 " "**
Bentonite	**5.0 " "**
Calcium carbonate, precipitated	**63.2 " "**
Sodium lauryl sulphoacetate	**3.0 " "**
Saccharin sodium	**0.3 " "**
Volatile oils	**1.0 " "**

This tooth powder is considered to have the highest content of active ingredients which under average home use caused no irritation. It is believed that this dentifrice works by virtue of the protein denaturing action of its high urea content which, combined with the ammonium phosphate, produces a strong buffering action at the site of acid production. High concentrations of urea were found necessary for greatest effectiveness, as well as for rapid penetration of the intact dental plaque.

Apparently a separate mouth rinse was not developed. However, the manufacturers of this dentifrice ("Amm-i-dent") suggest that the action of the urea is further

(*Continued on page 229*)

Mixed Sulfas

(*Continued from page 152*)

Alkalizing Agents

The figures in Table II demonstrate also that the administration of alkalizers with single sulfa drugs is an effective means of reducing crystalluria. But it is important that sufficient amounts of the alkalizing agent be used. For example, when sodium bicarbonate is given in a dosage of six grams a day with sulfamerazine, the incidence of crystalluria is about the same as when sulfamerazine is administered alone. When the dosage of sodium bicarbonate is raised to 12 grams a day, the incidence of crystalluria is significantly lower. But apparently little is to be gained by raising the dosage to 24 grams a day.

There are, however, certain disadvantages to the use of alkalizing agents with single sulfonamides. Lehr[28] has pointed out that adequate alkalization cannot be accomplished in every individual even with excessive amounts of alkalizing salts. In addition, at the maximum pH values attainable in the body the solubilities of sulfathiazole and acetyl sulfathiazole are only slightly increased. Alkalization, especially with sodium salts, is contra-indicated in patients with cardiac or renal insufficiency. Still another disadvantage to the use of sodium bicarbonate with single sulfonamides has been demonstrated by the work of Flippin and Reinhold.[18] At its most efficient dosage—12 grams—it has been shown to decrease the sulfonamide levels in the blood.

Oettinger and Cronheim[40] investigated the further reduction of crystalluria by the simultaneous administration of combined sulfas and alkalizing agents. For this study, they used a suspension of microcrystalline sulfadiazine and sulfathiazole plus sodium citrate and sodium lactate. Sodium bicarbonate was not used because it is incompatible with such a suspension.

During the course of the study 107 specimens of urine were examined for sulfonamide crystals. Approximately 60 per cent of the urine samples had a pH of 7 or above; only three specimens in all contained sulfonamide crystals, an incidence of 2.5 per cent. One of these patients developed gross hematuria in connection with crystalluria during the early stages of treatment; in the other two cases the crystalluria was of moderate degree. This incidence of crystalluria compares with that of six per cent obtained by Flippin and Reinhold and 7 per cent by Lehr with a mixture of sulfadiazine and sulfamerazine without alkalizing agents. Naturally the use of mixed sulfas does not preclude the administration of alkalies jointly, if desired.

Blood Concentration and Excretion Studies

Just as the different sulfonamides in a mixture dissolve independently of one another, so their absorption and excretion by the body are accomplished independently. This conclusion is supported by data from extensive studies in animals and human beings, carried out mostly by Lehr.[28-30-35-43] Some additional evidence has been contributed by Frisk and his coworkers.[16]

(*Continued on page 224*)

Fragrances that help sales

Moussaldine

French in character, and distinctively modern, Moussaldine imparts a versatile and truly individual note to the creation of fine perfumes.

As a base, it will enhance your Chypre, Fougere, and Aldehyde compositions. Used alone, it will lend warmth and distinction to your finer Perfumes and Toilet Waters.

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Perfumer's Shelf

Essential Oil Association Adopts New Specifications

At the annual meeting of the Essential Oil Association on January 6, 1950, E. C. Kunz, chairman of the Scientific Section, reported that during the year meetings were held in which the specifications for a number of synthetics and also one essential oil were discussed. It appears that on synthetics, more unanimity can be obtained in a shorter period of time than in the making of a specification for an essential oil. As a result of these discussions, specifications on the following synthetic aromatic chemicals and essential oils were adopted: Anisic Aldehyde, Sage Dalmatian, Lavandin Oil, Diphenyl Oxide, Acetophenone, Methyl Acetophenone, Ethyl Phenyl Acetate, Methyl Phenyl Acetate.

Perfume Compounding Fundamentals

In discussing the fundamentals of perfume compounding, J. Augustin *Manuf. Chem. & Manuf. Perf.* 20:495, 1949) points out that it is the aim of most perfumers to produce blends which uniquely express their own ideas. Knowledge and experience are essential because not only is it necessary to know which blends yield the best effects but also to make certain that the product will retain its color and strength by properly rounding off and fixing the composition. According to this authority, the main stages in the compounding of a perfume are: (1) Blending of the components, (2) Solution of the blend in alcohol, (3) Addition of a very small amount of water, (4) Gentle heating on a water bath, repeated several times, (5) Correction of the resulting odor by further addition of aromatics, (6) Freezing point test in a mixture freezing at several degrees below 0°C., and (7) Filtration and, if necessary, coloring.

Stage 1 is the most important and necessitates most of the preliminary trials and experiments. In most cases it is advisable first to achieve roughly the required note and then to round off and fix with the appropriate ingredients. Alternatively, one may start with the fixative, and then introduce the compound before finally rounding off. For 100 parts of perfume oil it is usual to take 10 to 25 parts of fixative. Four main operations are involved in Stage 1: Preliminary solution in alcohol (sometimes in benzyl benzoate); compounding of the perfume base; rounding-off; fixation.

From this, it is obvious that different methods can be used in producing perfumes. By the simplest method the ready-made perfume oils are blended and dissolved in alcohol. Depending upon the quality of the additives, a good extract can thus be obtained, but it will never possess the full-bodied, powerful and rounded character of a perfume prepared with predissolved oils.

The special notes imparted by tinctures of musk, ambergris, etc., are unattainable with other agents, and such "classic" tinctures should not be lacking in any perfume laboratory. Owing to the high price and physical characteristics of these tinctures, they are often replaced as fixatives by cheaper agents, including synthetics. Preparation of the genuine tinctures (1-3 per cent) is an intricate and time-consuming operation, and purchase from the makers is preferable.

Alcohol with a perfectly pure odor must be used if the original fineness of the perfume oils is not to be largely nullified. A so-called grade 1 spirit is permissible for medium-quality perfumes. A superb grade suitable for the finest perfumes can be prepared from commercial alcohol by various methods of rectification, chemical treatment, and ultrafiltration. But even such fine spirits develop their optimum effect only after pre-treatment or pre-fixation with a trace of perfume.

Cyclo-Lavandulol

H. Schinz and his associates (*Helv. Chim. Acta.* 32:1564 and 1568, 1949) have shown that natural *l*-lavandulol, when heated to 100°C. with 100 per cent formic acid, gives *d*-clyclo-lavandulol, while *dl*-lavandulol similarly gives *dl*-cyclo-lavandulol. The process is analogous to the cyclization of geraniol, and cyclo-lavandulol was thought at first to be 1, 1, 3-trimethyl-4-hydroxymethyl-cyclo-Δ^2-hexene. On oxidation with alkaline permanganate, however, it failed to give the expected geronic acid (cyclo-geraniol under the same conditions readily gave *iso*-geronic acid), but instead a ketolactone. Hence it was concluded that cyclo-lavandulol is 1, 1, 5-trimethyl-2-hydroxymethylcyclo-Δ^4-hexene.

Flavoring Dentifrices

In discussing the flavoring of dental preparations, the British authority, L. Mansfield (*Retail Chemist* 20:72, Nov. 1949 notes that practically the same type of flavors are used in powdered dentifrices, paste dentifrices, tooth soaps, liquid dentifrices and mouth washes. He states that peppermint oil still reigns supreme as the favorite flavoring agent in England, although in the United States, there is a preference for oil of wintergreen (methyl salicylate). Peppermint possesses the essential characteristics of a flavor for dentifrice products in that it possesses a freshness which has a wide palatable appeal. Peppermint oil is not generally used as a straight flavor but usually has several other oils added to it to modify the flavor and at the same time to obtain a pleasing and special distinctive note which identifies a maker's product and is a big factor in the sales appeal to the public. Many substances have been used as adjuncts, including oil of cloves, aniseed, caraway, eucalyptus, pimento, cinnamon, nutmeg and thymol, to name a few. Sometimes camphorated chalk is used as an ingredient of dentifrice powders, while other powders are met with which have been touched up with a little rose. Citrus oils have also been used, but the public seems to prefer peppermint and the spice oils. Points which have to be borne in mind in the selection of the flavors for those powder products include the effect of the basic materials on the oils and other bodies used, and the amount of flavor absorbed in the powder.

Mansfield presents formulas for typical flavoring compounds for dental powders; the following two being illustrative examples:

I

Oil of peppermint	25
Anethole	12
Menthol	5
Isoeugenol	5
Oil of cassia	4
Oil of bergamot	4
Tincture of myrrh	15

II

Methyl salicylate	20
Aniseed oil	15
Cinnamon bark oil	15
Eucalyptus oil	4
Peppermint oil	44
Thymol	2

The perfume is usually incorporated into a portion of the powdered ingredients, well mixed, and this mixed in with the remainder of the bulk. Owing to the absorptive nature of the basic ingredients it is very advisable to examine the powder for flavor value a few weeks after the flavor has been added as selective absorption may have taken place and the flavor found to be quite different from what it was at the commencement.

The flavoring of tooth pastes follows the same rules as for powders since they consist in the main of similar basic ingredients with an excipient added.

Spanish Oil of Thyme

A description of Spanish oil of Thyme, plus data on analytical methods has been given by C. M. Barcelo (*Afinidad* 26:63, 1949). The most common species of thyme in Spain is *Thymus vulgaris*, of which the composition and qualities vary in different regions and according to the season of collection. The essential oil is of a reddish green color usually, often differing in characteristics from French or German oils. Density is 0.930 to 0.956, the specific rotation is + 1°30′ to 3° and refractive index 1.504 to 1.510. Phenols content is fairly high, namely 50 to 75 per cent., consisting for the most part of carvacrol without thymol. In these respects, together with its greater solubility in alcohol, of about 80 per cent, it differs from other continental oils of thyme.

In certain districts of Spain, as Almeria, Malaga, Granada, the oils approximate more closely to the French or German kind, in that the phenols consist for the most part of thymol, namely, from 20 to 53 per cent of the oil. The content varies not only with district but also with time and methods of extraction. In qualtative analysis 100 cc. of the essential oil are rectified or distilled *in vacuo*, yielding a colorless product. 25 cc. of this is extracted two or three times with two or three times the volume of 0.1 *N* sodium hydroxide. The aqueous layer is decanted and treated with 2 *N* hydrochloric acid, when the thymol or carvacrol float on the surface of the acidified liquid. Two samples are taken for analysis. To the first in alcohol solution a few drops of ferrous chloride are added, and the presence of carvacrol is indicated by an intense green color. The other sample is sulphonated with sulfuric acid and a few drops of water and ferric chloride are added. A violet color indicates thymol.

Oil of Lavandula Stoechas

According to A. F. Costa and J. C. do Vale (*Noticias farm.* 14:382, 1948, through *Chem. Abstr.* 43:9381, 1949), the essential oil from *Larandula stoechas* growing wild near Coimbra, Portugal, had the following characteristics.

Specific gravity	0.935
Specific rotation	−44.7°
Index of refraction	1,4812
Acid number	3.7
Ester number	114
Ester number after acetylation	185

With respect to composition, the oil contained 39 per cent esters, 31 per cent combined alcohols, 23 per cent free alcohols and 17 per cent cineole. Sylvestrene was present. Phenols, aldehydes, pinene, and borneol were absent. The alcohol fraction separated by the phthalic anhydride method was strongly levo-rotary. The oil is markedly different from that of *Larandula pedunculata*, although the two plants are much alike.

Leaf Alcohol

In a review in *Soap, Perfumery and Cosmetics* (22:716, 1949), R. W. Moncrieff states that β-hexenol (also known as leaf alcohol, βγ-hexenol and hexen-3-ol-1) has been extracted as the phenylacetate from the last runnings of Japanese oil of peppermint and from the green leaves of various plants. It has a powerful green leaf odor, reminiscent also of chrysanthemum, and a slight mustiness. It has been isolated from freshly fermented leaves of tea, and it has been reported to be one of the chief constituents of oil of green tea.

It is partly responsible for the flavor of black tea obtained by withering and fermenting green tea. Its fresh green odor makes it of interest to the perfumer, while the odors of some of its derivatives also invite attention. With the exception of α-β hexylenic aldehyde this substance (β-hexenol) is the most important contributor to the production of the viridescent odor of fresh leaves.

He reports that a new method of synthesizing β-hexanol and its homologues has been described by H. Normant (*Compt. rend.* 226:733, 1948) In this process, tetrahydrofuran is chlorinated to yield 1, 2-dichlorotetrahydrofuran which is reacted with ethyl magnesium bromide to give 1-ethyl-2-chlorotetrahydrofuran. The latter, on treatment with metallic sodium, gives the sodium derivative of the alcohol. Normant claimed an overall yield of 65 to 73 per cent on the tetrahydrofuran used. The hexanol readily gave a phenylurethane which boiled at 184 to 185° C. under 12 mm. and which, when kept on ice, gave crystalline needles which were, however, impregnated with oil. The acetate was readily formed by treating the hexenol with an excess of acetic anhydride. It boiled at 61° C. under 12 mm., had a density of 0.908, and possessed a slightly fruity rose odor. It gave a 97 per cent yield of the 3, 5-dinitro-benzoate; the crude product melted at 20 to 22° C., but after repeated recrystallization from ether or ethyl or methyl alcohol gave a small quantity of product melting at 46.5 to 48° C. By using appropriate Grignard reagents, β-pentenol, β-heptenol, β-octenol, etc., have also been prepared. This method affords a convenient means of lengthening a carbon chain by four carbon atoms.

Adulteration of Bitter Almond Oil

In a discussion of the adulteration of bitter almond oil, C. Massatsch (*Pharm. Ztg.* 85:141, 1949) reports that a sample of a so-called "bitter almond oil" contained 50 per cent of benzyl alcohol. He also noted that a sample of "strawberry oil" consisted of 65 per cent benzyl alcohol and 35 per cent of benzyl acetate.

In another report, F. O. W. Meyer (*Pharm. Ztg.* 85:223, 1949) pointed out that benzyl alcohol, which is used frequently to adulterate bitter almond oil, is not as physiologically inert as is generally believed. He found that small amounts of the substance (one-tenth of a drop) caused temporary anesthesia of human taste buds. Cake prepared with a flavoring containing benzyl alcohol as an adulterant produced the same reaction in five out of six tasters.

Estimation of Mustard Oil

A method of estimating the amount of mustard oils in mustard seed and other materials has been developed by F. A. de la Vega and A. F. R. Capillas (*Galencia Acta.* 2:47, 1949 through *Chem. Abstr.* 43:8097, 1949). They point out that, since the myrosine is inactivated in dry plants, it is necessary to add one part of white mustard seeds to each four parts of the plant material. This, however, is not necessary with fresh plants. After maceration of 10 Gm. with 100 cc. of water at 37° C. for two hours, 2 per cent of olive oil and 20 cc. of alcohol are added and the oils distilled into dilute ammonia until 70 per cent of the liquid has passed over. The distillate is heated for one hour with silver nitrate at 80 to 85° C. with a reflex condenser. It is stated that the iodometric method of the Swiss Pharmacopoeia V gives identical results.

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Comparison	U. S. Pharmacopoeia	Roche* Regular Type	Roche* Ampul Type
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Moisture	5% Maximum	0.75—2.0%	2.0—3.5%
		*Usual Commercial Average Range	

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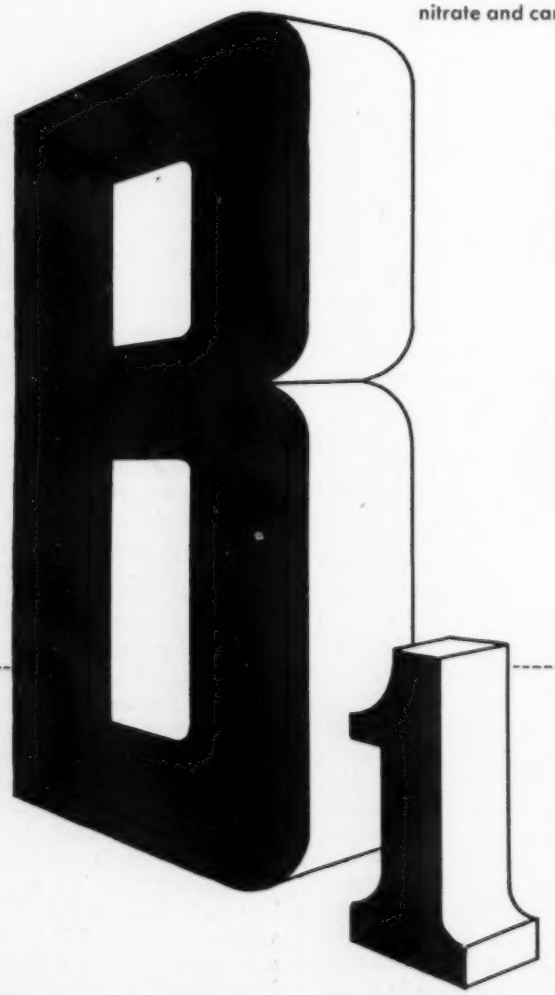

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Abreast of the Markets

1950 Seen As Strong Year; Shortages Persist in Oils and Botanicals; Quicksilver Cartel Is Dissolved

With the closing of the inventory period, trends in the market are becoming more sharply defined as economic, political and natural conditions exert their varied degrees of influence throughout the producing areas of the world. Essential oils and botanicals are becoming firmer, while several pharmaceutical raw materials like menthol and glycerine are subject to change with the development of outside influences affecting supply and demand. Oils from the Reunion Islands (geranium, vetiver, and ylang ylang, for example) are undergoing production losses and as in the case of geranium especially, rising sharply in price. H. P. Wesemann, president of the Essential Oil Association, in an address before the association last month, attributed this development to high labor costs, stating that the extensive sugar industry in that area was paying natives high wages, entirely incompatible with the essential oil industry there. A cyclone in January of this year has reportedly damaged geranium plants further and cut the proposed production severely enough to warrant further advances of this and other oils indigenous to this area.

Far Eastern commodities like anise oil, ergot, and pine needle oil are becoming scarce and exhibiting sharp advances owing to the political upheavals and Iron-Curtain activities. The recent shelling of the freighter *Flying Arrow* off Shanghai by the Chinese Nationalists has virtually closed the port to shipping and upset the export schedules of menthol shipments to this country. This situation, combined with the unseasonably warm weather during the first part of the year and the abrupt appearance on the market of antihistaminic drugs has disturbed the menthol status.

Droughts in Spain last year reduced production of sage, rosemary, and allied oils, while a similar condition in the United States is said to have produced a deleterious effect on peppermint oil (low menthol content) and hindered production of botanicals originating in the southern states such as witch hazel leaves and wormwood herb.

Europe is still importing large quantities of material from the United States through the Marshall Plan, but is simultaneously developing economic and industrial strength of her own, a condition which in itself has tightened the over-all supply picture, most apparent in glycerine and vanilla beans, the Mexican variety of the latter having all but vanished from the market.

Fritzsche Brothers, in the January issue of the *Fritzbro Reporter* commented on the present trend, stating that "continued good business in the United States and improving conditions abroad particularly in some European countries and in South America has greatly increased the demand for many essential oils just when the supply situation has become most acute . . . It may take some time for restoration of normal supply conditions through the operation of higher prices and in some cases this may never occur because producers have found more profitable and more stable occupations. Increased costs of labor and cost of living in many foreign countries make it seem very improbable that price levels regarded as normal before the war will ever be attained again."

A spokesman in the botanical field has indicated that the effects of the 30 per cent currency devaluation of September, 1949 on market prices have worn off. Using papain as an example this source declared that the product had reached its lowest level and would begin advancing very soon. It is felt that producers will gradually increase their prices of raw materials by 30 per cent in order to restore values to the predevaluation period level.

Glycerine Demand Remains High

Although a record production of 200 million pounds of glycerine is anticipated in 1950, still no easng off of the situaton is expected, owing to the corresponding rise in the demand for the item, both domestically and in foreign markets. Six months ago European countries were exporting large amounts of glycerine; now they are importing heavily because their industries have since enlarged and require more glycerine than is available within their borders. The ECA recently allotted one million dollars to the American bizonal area in Germany which is to be spent on crude glycerine ($800,000) and dynamite glycerine ($200,000) over the next two or three months. Preliminary bids were issued last month by contractors in the United States but were not accepted by the German firms which are awaiting a reopening of the bidding.

The United States produced 196 million pounds of natural glycerine in 1948, plus an additional amount of synthetic. The synthetic production did not get under way on a full scale until the third quarter in 1949, however, because manufacturers had been plagued with technical difficulties up to that time. Total production of both the natural and synthetic glycerine amounted to about 190 to 195 million pounds in 1949, and the current output of the synthetic material is estimated at three million pounds a month, or 36 million pounds for the year 1950. Coupled with an expected 170-million pounds of natural glycerine, this year's total, it is estimated, will exceed 200 million pounds.

Quicksilver May Fall Lower

With quicksilver prices already the lowest they have been since World War II, and with the recent dissolution of the Spanish-Italian Cartel, Mercurio Europeo, spokesmen in the trade will not venture a guess as to the immediate future of the metal. Since the International Quicksilver Corp., 67 Wall Street, New York, has been named the sole agent of the Spanish metal, it seems likely that Italian producers may compete in the world market by reducing their prices below the current level of $71.00 a flask.

Whether or not quicksilver prices will be forced down by the Spanish-Italian competition is a moot question, and one which only time will answer. Importers of the metal, however, are advised to maintain minimal inventories until a stable price has been reached.

(*Continued on page 222*)

• Prices quoted in this section were current on the first of this month.

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Peppermint Still Advances, Geranium May Top $20; Increasing Prices Expected To Cancel Devaluation

The continued advance in peppermint oil ($6.00 to $6.50 for the natural and $6.50 to $6.75 for the redistilled) has resulted from a number of factors, among them, that this year's crop was lower in menthol than normal. Farmers are said to be in a strong position at this time, capable of setting higher prices, and assured of receiving them. In some quarters it is suggested that the present supply in farmers' hands (estimated at near 10,000 pounds, which is all that is left from an original 1½ million pounds produced in this country last year) will fall short of future demand.

The chief peppermint-producing regions of the United States are southern Michigan and northern Indiana, which have been the leading producers of peppermint oil since the middle of the last century. Peppermint has also been grown in Washington and Oregon since 1909, with increasingly larger acreage devoted to the crop. San Joaquin County in California has produced some oil, although very little in the last few years.

Cyclone Hits Geranium Oil

Already affected by high labor costs, geranium oil is expected to advance even more sharply in the next few months, following a severe cyclone in the Reunion Islands which struck in January. The oil, which advanced $2.00 during January to the range of $15.50 to $16.50, may very well increase in price to over $20.00 a pound, according to some sources, because of the damage incurred during the recent storm.

Menthol Status Remains Doubtful

Shipments of menthol from China have been curtailed to a greater degree with each successive advance of the Communist drive. Brazilian producers have been hesitant over ordering peppermint oil from the farmers, until they know more definitely what to expect of the Eastern market. If the menthol supply should become more fluid in China, with or without Communist sanction, Brazil would then be forced to meet the Eastern prices or even to undercut them in order to break into the market. On the other hand, if Chinese menthol should become exceedingly scarce, and the price exceedingly high, the Brazilian market would most probably hoist its menthol prices without discretion.

Future developments of menthol are any one's guess at the present time, therefore, and hinge heavily on the Chinese state of affairs. Spot supplies in New York are adequate for now and are quoted at prices cheaper ($10.50 to $10.60) than those offered at the origin in Brazil. Consumer demand has been unusually light this year, not only because of the moderate climate, but also because of the influx of antihistaminics on the market. The true effect these new cold drugs have had on the menthol picture will not be known, however, until later in the year when the 1950 sales can be compared with previous years.

Balsam Tolu Advances

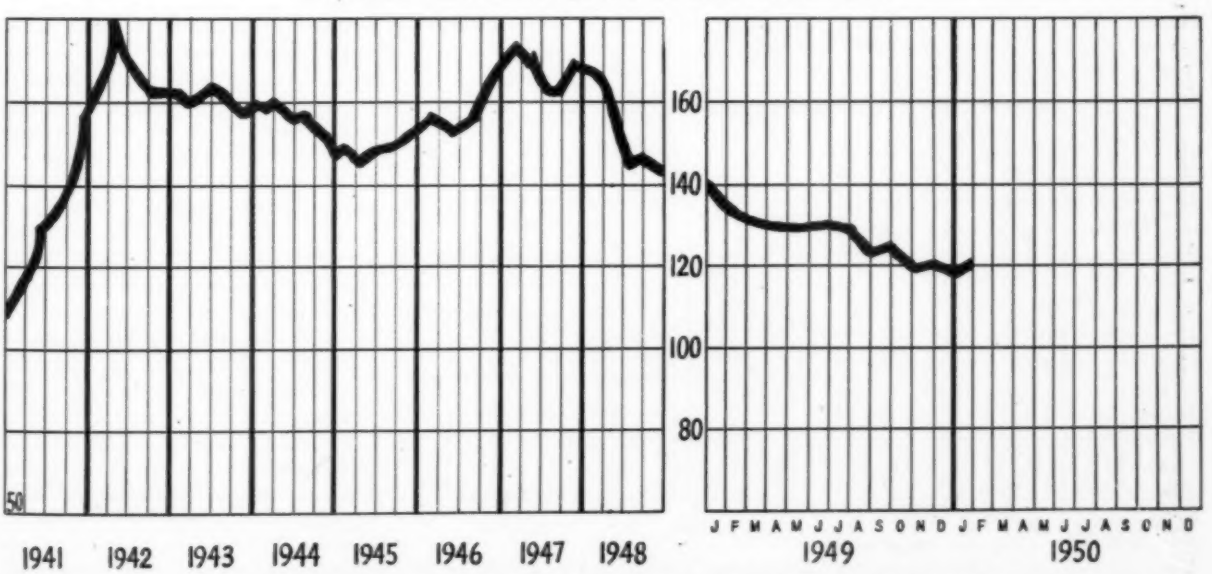
Balsam Tolu advanced during January from $2.20 to $2.40 on the inside prices and from $2.40 to $3.00 on the outside price. The three-dollar prices were anticipated last month in view of the advancing shipping costs.

Papain Reaches Turning Point

Papain, having reached a turning point in the downward price trend, is expected to advance during the next few months. Depending on quality, the drug is selling in the range from $2.25 to $2.75 on spot in New York. It has been suggested by one spokesman in the trade that when importers have depleted present supplies of papain they will have to pay much higher prices when they replenish their stocks.

This advancing price trend, according to the source, is developing in general in products originating in currency-devaluated countries. It is felt that the 30 per cent devaluation of last September has now run its course and dissipated, since foreign shippers are beginning to move their prices up gradually and strategically, with the eventual aim of restoring prices to the levels of the pre-devaluation era. Since Great Britain and other countries in the Sterling area are relax-

50 Raw Materials—Weighted Price Index. 1926 = 100.



The price index of fifty commodities for January advanced from 117.8 to 121.0.

JANUARY PRICE CHANGES

UP

Anise Seed Star 2c
Anise Oil, U.S.P. 10c
Balsam Tolu 20c
Cananga Oil, Native 50c
Cumin Seed, Morocco 2c
Ergot 75c
Geranium Oil
  African $4.75
  Bourbon $2.00
Lemon Oil, Calif. 15c
  Italian 25c
Lemongrass Oil 5c
Passion Flower 5c
Patchouli Oil $3.00
Peppermint Oil
  Natural 50c
  Redist. 50c.
Rosemary Oil 15c
Senenga Root 15c
Vanilla Beans,
  Bourbon 50c
  Mex. Cuts $1.25
  Mex. Whole 75c
Vetivert Oil, Java $3.10
Wormseed Oil 10c

DOWN

Almond Oil, Bitter 25c
Arabic Gum, Sorts,
  Amber ½c
Beeswax, White 1c
Cardamon Oil $5.00
Cascarilla $2.00
Ipecac Root 10c
Japan Wax 12c
Menthol, Natural 40c
Mercury $5.00
Montan Wax 5c

ing restriction on export licenses, these foreign governments apparently feel that exporters will attract more dollars through their advancing prices.

Papain bears close watching in the months ahead, although it is but one of a number of items which will reflect the recovery period in the Sterling countries and which will cause the botanical market to become very firm during the year 1950.

Quicksilver Lower

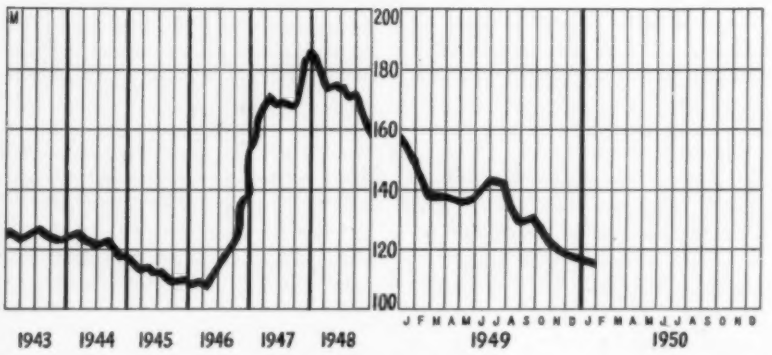
(Continued from page 219)

The dissolution of the cartel occurred soon after the United States established an all-time import record of 100,000 flasks, some 80,000 of which came from Italy and went into the government stockpile now estimated at well over 200,000 flasks. Production of quicksilver in the United States has become sluggish due to the falling prices, many of the mines having closed down to await an upturn in the market price of the metal. Use of quicksilver increased for the first time since the war, in the third quarter of 1949 to 8,000 flasks, as compared with 7,600 flasks for the previous quarter. In the first quarter of 1949, domestic production amounted to 1,440 flasks, while production for the same period in 1948 was 5,300 flasks, or a little over four times as great.

Yugoslav metal has added another unknown factor to the quicksilver situation, in that it is being sold at $20 less per flask than the Spanish or Italian commodity. Great Britain will very probably receive a greater portion of the metal than the United States, judging from the recent five-year trade treaty between the Tito government and John Bull. Britain will receive nonferrous metals such as lead and copper, timber, and corn in return for chemicals, rubber products, machinery and other goods.

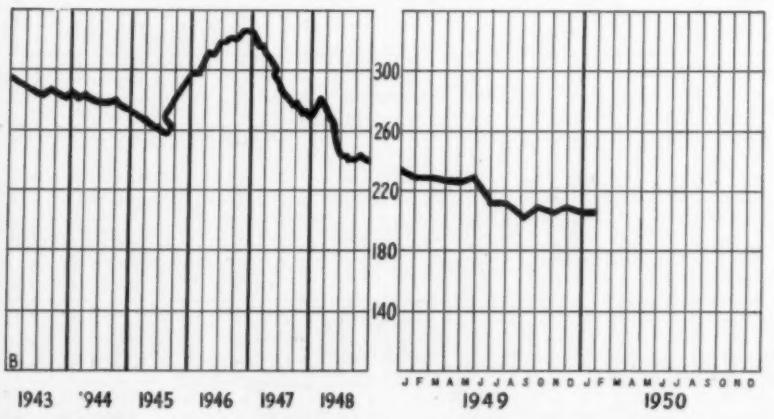
With the increased consumption of quicksilver in the United States, a corresponding upturn in the market price might be expected. In view of the $5.00-decrease during January, however, and the splitting up of the Spanish-Italian cartel, the trend may continue downward.

15 Medicinal Chemicals—Weighted Price Index. 1926 = 100.



The medicinal chemicals index declined fractionally from 117.3 to 116.7. Menthol and quicksilver went down.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index advanced slightly from 205.4 to 205.8. Balsam tolu and ergot were higher, ipecac was lower.

Anise Oil Becomes Scarcer

Anise oil prolonged its sharp climb in January, mounting to $1.35, ten cents over the previous month's $1.25. As anise replacements become increasingly difficult to procure from China, sources in the trade believe the article may possibly be priced out of the market. With the developing scarcity of the oil and the seasonal demand for anisic aldehyde, important factor in the manufacture of antihistaminics, synthetic preparation of the aldehyde is under way. There are two sources of the material. One is from para-hydroxybenzaldehyde which produces a 100 per cent yield of anisic aldehyde. The other source is methyl carvacrol which in turn is converted to anethole as an intermediate, and then to the desired aldehyde, a process which results in an 80 per cent to 85 per cent yield, and which is more expensive and less efficient. At this time, it is not known which method will be used.

Imports of anise oil during the first nine months in 1949 were over twenty times as much as imports for the same period in 1948, a paradoxical situation in view of the current dwindling anise supplies. The explanation seems to be that importers bought only 28,510

pounds in 1948 as compared with 590,240 pounds in 1949 because there was little fear of Russian interference of China at that time. During 1949, when the Communists advanced southward into China toward the port of Hong Kong, importers apparently rushed to buy all available supplies. Import figures for the entire year of 1948 were only 228,010 pounds and 441,420 pounds in 1947.

Citrus Oils Begin Climb

Currently advancing prices in lemon oil have been attributed to the freezing weather in California. The amount of damage caused by the cold spell will not be determined for some time, but apparently the growers are playing safe by increasing their prices now, in the event of future losses. Lemon oil is quoted from $2.80 to $3.15, an increase of 15c over last month's figures. Italian lemon oil has advanced 25c to the current range of $2.75 to $5.05.

Bois de Rose Is Inaccessible

The supply of bois de rose is diminishing rapidly and a tight situation is developing, although there has been no advance in price over last month ($3.10 to $3.50). This development is entirely due to the Brazilian supply picture which has bogged down as a result of low water supply both on the Amazon River and on its tributaries. Because the bois de rose is derived from Brazilian rosewood trees located in the states of Amazonas and Para, about a thousand miles from the mouth of the Amazon River, gathering of the material is entirely dependent on the facility of water transportation. In addition, most of the trees grow in areas far distant from the Amazon, often one hundred miles, and the rosewood logs can be carted to civilization only with the indispensable aid of the creeks and streams, offshoots of the Amazon.

The present shortage of bois de rose has developed because these Amazon tributaries, dry during the greater part of the year, are usually navigable only during the flood season from April to July. Even then, a rise of fifty feet in the river level is necessary before the interior is accessible. Apparently the river did not rise enough last year, and so less wood was gathered. As might be expected, cutters collect those trees which are closest to the streams, and with each succeeding year, they must penetrate deeper into the undergrowth.

Waxes Prove Puzzling

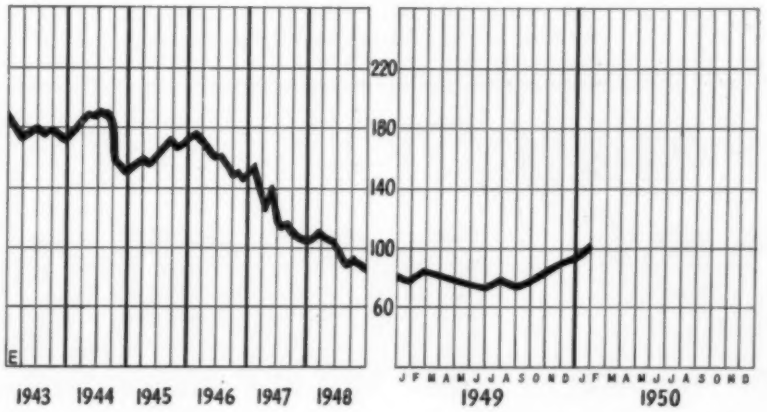
Three developments occurred in waxes during January, one concerning Japan wax, and the others, ouricury and Montan waxes. One source has reportedly offered Japan wax at the uncommonly low price of 60c a pound, with no explanations. The current price range of the wax extends between 73c and 75c, which is a reduction of 12c a pound from the previous month's quotations.

Montan wax was reduced 5c a pound during January, at a time when it would seem more logical for a price increase parallel with the upward trend of other products of Russian-controlled origin. It may be that a minor price war exists between the Bohemia, Czechoslovakia, variety and the Riebeck, Germany, source in order to gain market preference.

Ouricury wax jumped 5c a pound to the range of 83c to 84c, possibly as a result of the disagreement between Brazilian and New York dealers concerning a 100 per cent letter of credit as opposed to a 90 per cent credit. Brazilian sources insist on a 100 per cent letter of credit prior to the sale of ouricury wax, while the Wax Dealers' Association in New York is in favor of a 90 per cent credit. The dealers' point of view in New York is that 90 per cent payment of wax shipments should be paid first, and the remaining 10 per cent after the arrival of the wax shipment. In this way they can deduct from the 10 per cent for any excessive losses in refining. It is much more convenient, they feel, to deduct payment for losses before the 10 per cent has been paid rather than to seek a refund from the Brazilian exporters following the transaction.

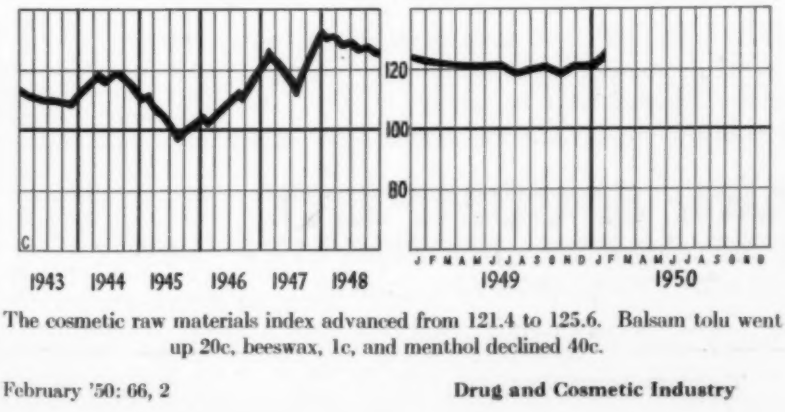
Some sources declare that if the price of ouricury advances by as much as 2c a pound more, (which would bring it up to 85c to 87c) American importers will switch to No. 3 North Country Carnauba refined wax, now selling in the range of 87c to 88c. If the ouricury approaches this price, they may very well buy the superior carnauba, which can be used for the same purpose.

15 Essential Oils—Weighted Price Index. 1926 = 100.



The essential oils index advanced abruptly from 92.3 to 103.3. Anise, cananga, geranium, lemon, and peppermint were all higher.

25 Cosmetic Raw Materials—Unweighted Price Index. 1926 = 100.



The cosmetic raw materials index advanced from 121.4 to 125.6. Balsam tolu went up 20c, beeswax, 1c, and menthol declined 40c.

Mixed Sulfas

(*Continued from page 215*)

TABLE I

Solubility of Sulfonamides in Urine mg./100 ml. at 37°C.

Substance		*pH 5.9*	*pH 6.5*	*pH 7.1*	*pH 7.5*
Sulfathiazole		110	119	174	235
Sulfadiazine		14.5	27.5	59	98
Sulfamerazine		37	43	83	130
Total for Sulfas	Calculated	162	190	316	463
	Found	155	170	275	400
Acetylsulfathiazole		9.5	12.5	18.5	26
Acetylsulfadiazine		35	135	340	540
Acetylsulfamerazine		76	106	230	385
Total for Acetyl-sulfas	Calculated	120	253	589	951
	Found	140	270	580	950
Total for Sulfas and Acetyl-sulfas	Calculated from calculated values	282	443	905	1414
	Calculated from found values	295	440	855	1350
	Found	310	410	840	1400

Condensed from Frisk, Hagerman, Helander and Sjogren.[16]

(*Continued on page 225*)

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TABLE II

Sulfonamide Crystalluria with Various Forms of Therapy

Drug	*Adiurant*	*Adjuvant Dose g./Day*	*Crystalluria Present No. Samples*	*Crystalluria Absent No. Samples*	*Percent of Samples*
Sulfamerazine	None		41	114	26
Sulfadiazine	None		17	46	28
Sulfamerazine	Sodium bicarbonate	6	14	45	24
Sulfamerazine	Sodium bicarbonate	12	9	146	6
Sulfamerazine	Sodium bicarbonate	24	3	97	3
Sulfamerazine	Potassium bicarbonate	7.5	12	33	27
Sulfamerazine	Potassium bicarbonate	15	10	32	24
Sulfadiazine-Sulfamerazine Mixture	None		10	163	6

Condensed from Flippin and Reinhold.[15]

Lehr found that the administration of sulfa mixtures results in high and well-sustained levels in the blood and urine. When mixtures of sulfathiazole and sulfadiazine were given to animals and human beings, the blood levels were approximately the same as those for the equivalent amount of sulfadiazine alone despite the fact that sulfathiazole produces comparatively lower blood levels. Similar observations were made by Frisk[16] and by Oettinger and Cronheim.[40] Urinary excretion of the sulfas after the administration of mixtures indicated that their absorption was more complete than the absorption of single sulfonamides. Lehr explains this phenomenon by citing experiments with animals in which it was shown that smaller amounts of the sulfas are more completely absorbed from the gut and excreted in the urine than are larger amounts. Thus he concludes that the body handles each component in a sulfa mixture as though it had been administered alone.

Frisk and his group found that after administering their triple sulfa mixture orally to human beings, 75 to 80 per cent of the dosage was recovered in the urine. These figures compare favorably with those for orally administered sulfadiazine, of which only 50 to 70 per cent can be recovered in the urine.

(Continued on page 226)

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Mixed Sulfas

(*Continued from page 225*)

Antibacterial Potency

Lehr[27] found that *in vitro* the antibacterial potency of combined sulfonamides was in general additive, but in some cases there was evidence of potentiation. That is, the potency of some mixtures seemed in some cases to be greater than would be expected on the basis of the potencies of the individual components.

In some instances, clinicians have reported more successful results with sulfa mixtures than with single sulfonamides. Lehr[28] was impressed with the speed of improvement in a series of 70 patients treated with a mixture of sulfathiazole and sulfadiazine. The clinical study of Shore, Flippin, and Reinhold[42] is noteworthy because it claims unequivocally more successful results with a sulfonamide mixture than with single sulfonamides. In this study at the Philadelphia General Hospital a total of 381 pneumonia patients were treated over a three-year period. The response of patients receiving the combination was superior to that of the patients receiving the single sulfonamides. There was a more rapid initial fall in temperature supported by an earlier return to the normal.

Sensitization

Lehr[13,32] has presented a strong argument to the effect that reactions should be less frequent with combinations than with single sulfonamides. He points out that the erroneous idea is prevalent that sulfonamide sensitivity bears no relationship to the size of the dosage administered. He believes that the production of sensitization is dependent upon the maintenance for some time of a certain minimum concentration of the allergen in the tissues which are to be sensitized. Collecting data from the literature, Lehr was able to demonstrate a direct relationship between dosage and incidence of reactions.

Lehr's reasoning is based upon the assumption that sulfonamide sensitivity is not generic but may be associated with one drug to the exclusion of others no matter how closely related chemically. Lehr describes his experience with 610 patients given sulfa mixtures. Of this number, reactions attributable to sulfa sensitization occurred in only 11 cases, an over-all incidence of slightly less than two per cent.

However, this theory is not universally accepted at the present time.[6,12,31,38,42,47] Only after prolonged clinical use of these mixtures will it be possible to come to definite conclusions on this point.

Triple Sulfa Combinations

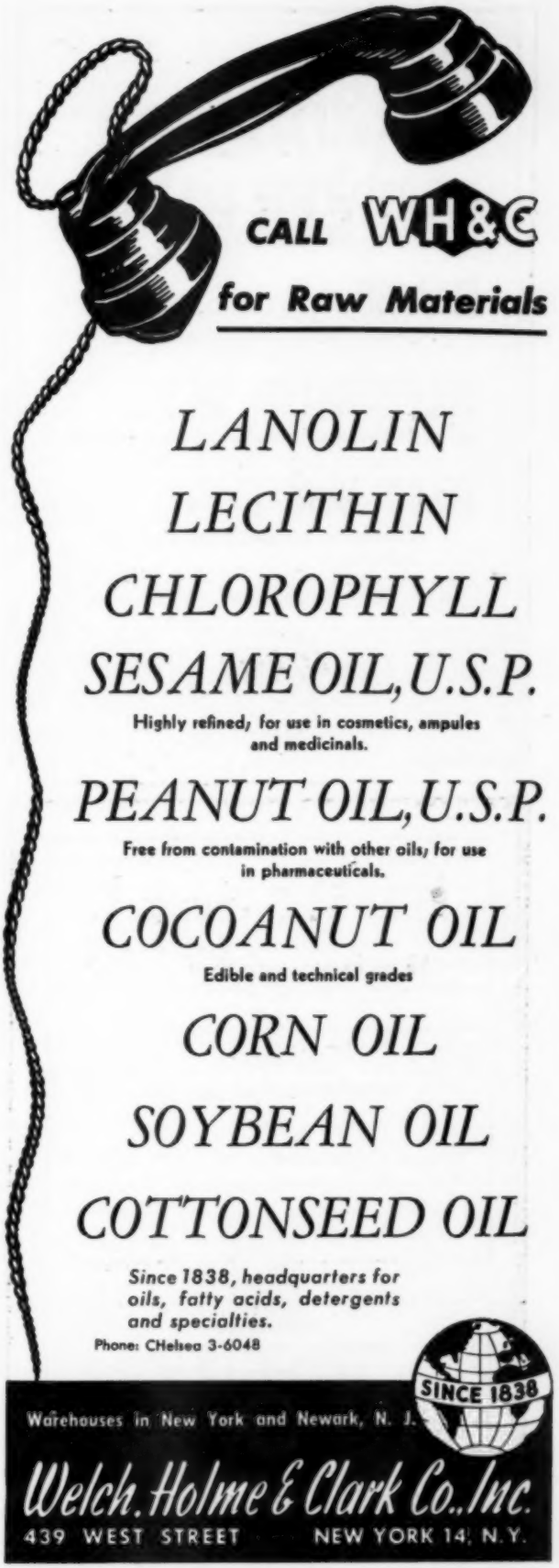
The foregoing deals for the most part with mixtures of two sulfonamides. More recently the trend has been toward triple sulfas. Lehr[29] showed in tests with rats that the latter mixtures were safer than double sulfas. He considered it justified to eliminate adjuvant alkali therapy when employing triple combinations.

Ledbetter and Cronheim[26] describe the treatment of a group of 28 patients with a triple sulfa mixture containing sulfathiazole. The patients were unselected and represented mainly surgical cases. The initial dose of two to four grams was followed by one gram every four hours. Approximately one-half of the patients received penicillin also. A total of 101 blood samples and 218 urine specimens were taken. The urine was inspected for sulfa crystals in both the free and acetylated forms. The general clinical response was good. No serious side reactions were encountered. Only one patient complained of nausea. Blood levels averaged from 7.8 to 8.5 mg. per cent of total sulfonamides. The degree of acetylation was remarkably low, the values averaging eight per cent in the blood and 17 per cent in the urine. In all, only six urine specimens contained sulfonamide crystals, an incidence of three per cent.

Johnson[25] studied the absorption, excretion and toxicity of a mixture of sulfapyrazine, sulfadiazine, and sulfamerazine in 61 patients with a variety of infections. The general initial dosage was four grams, followed by one gram every four hours, six hours, or eight hours. No urinary alkalizers were administered, but fluid intake was 2000 cc. or more daily. No serious toxic reactions occurred. Treatment was discontinued, however, in four patients. One developed drug fever without rash; three, nausea or vomiting. No definite evidence of disturbance of the hemopoietic system was found in any of the patients. None of the blood sulfonamide levels were below 5.0 mg. per cent. In all, 294 urine specimens were examined. Evidence of crystalluria was present in only 21, or an incidence of 7.14 per cent. In only one of these was the crystalluria of a marked degree. In general, no correlation was evident between blood levels and incidence of crystalluria.

Sulfonamides Available for Use in Sulfa Mixtures

Sulfadiazine was the starting point in the development of mixed sulfa therapy.[34] The first combinations were those of sulfadiazine with sulfathiazole, and, somewhat later, sulfadiazine with sulfamerazine. With the evolution of triple sulfa therapy, these three best-known sulfa drugs were used together, usually in equal proportions. This situation was disturbed when the Council on Pharmacy and Chemistry announced the exclusion of sulfathiazole from New and Nonofficial Remedies on the basis of the availability of less toxic drugs, namely sulfadiazine and sulfamerazine. This announcement originally applied only to sulfathiazole as an individual drug in comparison with other individual sulfa drugs,[8] but was subsequently also applied specifically to sulfathiazole as a component in mixtures.[9] While sulfathiazole will be included in U.S.P. XIV, which is to issue in 1950, the action of the Council has led to the consideration of other compounds for use as the third component of triple sulfas. Sulfamethazine has largely been chosen as the compound best qualified.[2,11,14] It has been used widely in Europe and is generally considered to be approximately equal to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sulfadiazine in effectiveness[4,11] as well as having low toxicity and relatively high solubility.[4,11,27] Sulfamethazine is considered by some to be particularly well adapted for use in combination with sulfadiazine and sulfamerazine because of the close similarity of chemical structure between all three compounds, which has been postulated to minimize the possibility of drug sensitization.[14,45] Triple mixtures containing sulfamethazine have been accepted by the Council.[11]

Sulfapyrazine has also been mentioned as a component[25,30] but its cost is prohibitive.[34] A compound which has been suggested more recently is sulfacetamide. Its value would lie mainly in its very high solubility, but it has a rather limited antibacterial activity against some pathogens responsible for acute systemic diseases,[39] being recommended primarily against ocular and urinary infections.[4,34] Sulfabenzamide, which is the benzoyl derivative of sulfanilamide, is analogous to sulfacetamide, the acetyl derivative, and exhibits similar characteristics, having been investigated clinically to a considerable extent.[3] Sulfapyridine and sulfanilamide are excluded from consideration by reason of their excessive toxicity and limited effectiveness. To complete the list of best known sulfa compounds, it is appropriate to mention sulfaguanidine, which has been described as one of the least toxic of all commonly used sulfonamides.[10] While this drug is usually thought of as one which is administered in massive doses—15 grams or more daily—in bacillary dysentery, of which only a small proportion is absorbed, there is evidence that when given in the much smaller dosage which is involved in triple sulfa therapy, it may be absorbed to an extent satisfactory for therapeutic purposes. Sulfaguanidine is active against many pathogens for which sulfa therapy is employed, and is more soluble in the urine than sulfadiazine or the other common sulfas.

Sulfonamide mixtures usually contain the various components in equal proportions by weight.[15,28,38,42] In some cases the sulfamerazine is used in a slightly lower proportion because it is excreted at a slower rate and therefore may be needed in smaller amounts.[1,16,26]

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(Continued on page 229)

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Status of the Ammoniated Dentifrices

(Continued from page 214)

enhanced and will persist for several hours if the brushing is followed with a rinse made by mixing some of the powder with water.

To test accurately the efficacy of this dentifrice, Henschel and Leiber made a direct study of its effect on the annual D.M.F. (decayed + missing + filled teeth) rate. One test group of 100 patients which used "cosmetic" dentifrices for a period of 7.8 years showed an average D.M.F. rate per year of 2.39 during this control period. Using the high-urea, ammonium therapy dentifrice for a period of about 2.9 years, this group showed a drop in their D.M.F. rate to 1.55. In a control group, which used cosmetic dentifrices throughout an observation period of 12 years, the D.M.F. rate during the pre-test period was 2.31. During the test period it was 2.48.

These data revealed an average reduction in caries incidence in the experimental group of 35.2 per cent over its own pre-test record, and a reduction of 37.5 per cent over the concurrent control group. A reduction was manifest in 82 per cent of the test patients. Henschel and Lieber concede, however, that "some proportion of the apparent caries-incidence reduction may be attributed to enthusiastic oral hygiene heightened by the knowledge of the possible therapeutic benefit of the dentifrice."

A high urea toothpaste has also been developed and has been marketed quite effectively. Because of a pending patent, specific data on its composition and method of manufacture are not yet available. However, the following general formula[26] provides some information:

Urea	**13.00 per cent**
Dibasic ammonium phosphate	**3.00 " "**
Excipients	**25.00 " "**
Abrasives	**38.00 " "**
Detergents	**2.00 " "**
Chlorophenyl derivative ("Boxin")	**0.25 " "**

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The nation's editorialists have finished describing the progress of the first 50 years of the 20th Century. Now, someone should interview the victims of the progress.

•

F'rinstance, there are some old-fashioned Americans who don't think the enlightenment Mussolini exported to Ethiopia was greater than the culture Caesar brought to Carthage. Incendiaries existed before bombs became fashionable.

•

And there are those who think utilities magnate Samuel Insull was closer to Jesse James than Thomas Edison.

•

It's true we had to wait for the 20th Century to become air-minded. But the celebrants in Nero's Bacchanalian orgies got just as "high" without four-motored airplanes.

•

Furthermore, the heralded Kinsey Report wasn't half so authoritative as "Song of Songs." King Solomon, with umpteen hundred wives, didn't delegate his research.

•

Even the British Empire didn't change basically since the Boston Tea Party: America is still regarded as England's most profitable New World establishment.

•

As a complete surprise to no one, the Cosmetic Industry hasn't changed much either: Last Century's creditors are this Century's co-makers.

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OXYQUINOLIN BENZOATE
OXYQUINOLIN SULPHATE
POTASSIUM OXYQUINOLIN SULPHATE
PHENOBARBITAL
PHENOBARBITAL CALCIUM
PHENOBARBITAL SODIUM
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Flavor	**1.75**	"	"
Water, to make	**100.00**	"	"

Obviously considerable skill and special technics are required in the manufacture of such a toothpaste which is claimed to be "completely stable" and "absolutely safe." Adapted from the tooth powder formula used in the clinical investigations, the paste is said to provide about the same dosage of active ammonium ingredient in the mouth as is available from the powder. This is due to the fact that a larger amount of tooth paste (by weight) than tooth powder is used by the average individual.

Of course a number of other ammoniated dentifrices, besides those discussed above, have appeared on the market. Among the more impcrtant of these preparations are the tooth powder and toothpaste marketed under the "Amion" label. The literature of the manufacturer describes the powder as containing calcium carbonate, jack bean meal, synthetic urea, and bentonite as the active ingredients.

According to the Council on Dental Therapeutics,[27] the corresponding toothpaste is said to contain the following ingredients in each 100 grams:

Synthetic urea (carbamide)	**8 Gm.**
Jack Bean meal	**1 Gm.**
Glycerine	**43 Gm.**
Dicalcium phosphate	**30 Gm.**
Tricalcium phosphate	**10 Gm.**
Propylene glycol	**5 Gm.**

In addition, the formula includes saccharin, sulfocolaurate, and flavor. It is pointed out that jack bean meal contains urease, an enzyme which would tend to liberate ammonia from the urea under the influence of the moist conditions present in the mouth. It is also noted that the distributing firm has initiated a scientific investigation of the product, but that no evidence of its effectiveness in preventing dental caries has come to the attention of the council.

Another toothpaste ("Dox"), not yet distributed nationally, is said[18] to be based on the research carried on by Grove and Grove[11] and to have been on the market since 1941. Instead of the urea-dibasic ammonium phosphate combination, this toothpaste is based on the use of ammonium hydroxide.

Various other ammoniated tooth powders and toothpastes are now available to the public, as well as a number of ammoniated mouth wash preparations.[18-28] However, it is not possible to discuss these individual products at this time or to consider the various claims made for them.

From a consideration of the literature it is quite evident that there is a great need for further, more carefully controlled clinical studies on larger groups of subjects.[1] However, as noted by the Council on Dental Therapeutics[29] last May, "The evidence that ammoniated dentifrices may aid in the prevention of dental caries when they are used properly should not be ignored and further research to determine their action

and uses should be encouraged." Work along these lines is being done but until the taste is completed, it is felt[30] that the use of ammonium salts to control dental caries is still experimental.

In the meantime, the advocates of other theories concerning the causes of dental caries are making themselves heard. Some have questioned the theory upon which the use of ammoniated compounds are based. For example, Tanz[2] has remarked that several workers have pointed to the possibility that there is an unknown factor in saliva that has an inhibitory effect toward *Lactobacillus acidophilus* in the mouth.

Other aspects of the theory are also open to doubt. This seems to be the case in the statistics obtained by Boyd, Cheyne and Wessels.[31] In their studies, the l.a. counts of 64 teen-aged girls were compared with the progress of individual tooth decay over a period of 30 months. It was found that the average count tended to parallel the rate of progress of caries when whole groups were compared. A great inconsistency, however, was seen in comparing the count and rate of caries progression for individual subjects. Equally low and equally high counts were recorded for individual subjects regardless of their subsequent caries histories. In this experiment an excessive number of salivary lactobacilli apparently was not the essential causative factor in tooth decay.

While these and other studies are being made, claims and counter-claims continue to appear in both the scientific and lay press. The need for caution with respect to the claims for these new products has been stressed on many occasions and by influential groups.[14] Perhaps the current situation was best summarized in a statement appearing in the August, 1949 issue of the *Journal of the American Dental Association*. This was to the effect that, "Whether ammoniated dentifrices will prove as effective in sweeping away caries as their advertisers have been in sweeping the country with glowing claims, time alone will tell. Meanwhile the public will have the privilege of being guinea pigs, the dentist will be extremely cautious in his recommendations and the purchaser will brush his teeth with tongue in cheek if such is physically possible."

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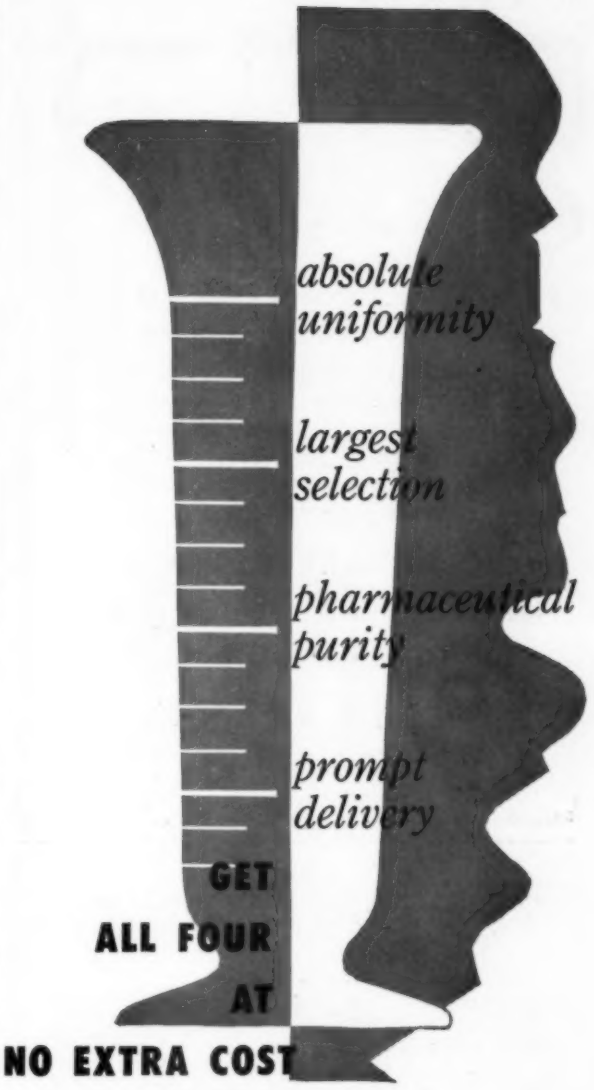
(*Continued on page 232*)



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F.D.A. Views Certification

(Continued from page 149)

efficacy of use.

The law now requires that the decision be reached upon a product basis. Because of that, any weakness in production and control systems of any existing manufacturer or distributor must be taken into account, as well as his disposition to limit efficacy claims to those reasonably supported by fact. And the Administrator cannot ignore the possibility that after decertification persons will enter the field who are neither satisfactorily equipped nor sufficiently experienced to produce antibiotics that are safe and efficacious, and to whom the production will present all of the difficulties and hazards faced by the original manufacturers when section 507 was enacted. Just such situations already have occurred several times; the certification procedure has prevented the distribution and use of the unfit drugs.

The Administrator is authorized to decertify only when he can derive reasonable assurance from all relevant facts that the drug can and will be produced and marketed by all concerned, so that it will be safe and efficacious for use. No matter how good a record an existing firm may have, certification may not be ended as to that firm so long as others in the same field have not demonstrated their ability to insure the safety and efficacy of the drug. The conditions for decertification have so far been met only by crystalline penicillin G.

The statement of what we think section 507 (c) means should not be taken as what we think the section ought to be. We think the section should be changed because we do not believe that once a firm operates under certification it should necessarily to do so for all time. Nor do we think that certification should be widely extended; it would be wholly impracticable and unnecessary to apply certification to drugs generally. But we cannot escape the fact that these important antibiotics are widely used in cases of serious and often fatal illness; that if they are in fact what they purport to be they will surely save the lives of hosts of people, whereas if they are not there will be many needless deaths. Nor can we escape the fact that to the public these antibiotics are "miracle" drugs and that sick people would be prone to believe any claim of efficacy made for them, however false. The significance of this is emphasized by current proposals for over-the-counter penicillin preparations; the emphasis is sharpened by representations currently made for antihistamine cold preparations.

These considerations place these important antibiotic

drugs in a special category. While other drugs are highly important in certain diseases and may be difficult to manufacture and control, the sum total of the values of these antibiotics to the sick is vastly greater than the sum total of the values of these other drugs.

It is hoped that through consultation with producers of antibiotics an understanding can be reached on how section 507 can be amended to preserve and strengthen its essential consumer protective features and eliminate those features which are unnecessary or undesirable.

Rigidity of the F.T.C. and F.D.A.

(Continued from page 153)

has entered into stipulations which were not only unfair but untrue. I quote from Stipulation No. 3171:

" 'A perfumer agreed to cease and desist from labeling or otherwise referring to said products as Flower Oils or through the use of the name of a flower or by means of the said words Flower oils, in connection with a lower name, or otherwise, so as to import or imply that said products are or have been made or compounded from the absolute or true oil of flowers or of the named flower, when in fact such is not the case. If the odor of a perfume product simulates that of a particular flower, and the name of such flower is used to describe such simulated odor, then in that case, the name of such flower shall be accompanied by some other word or words printed in equally conspicuous type so as to indicate clearly and unequivocally that said product is not made or compounded from the oil of the named flower and that the odor of such fragrance is not derived from or the result of the use of the oil of the named flower.'

"In the first place, there are many floral names used for perfumes where the particular flowers have no odor at all, such as the daisy, or bluet or asphodel. Then there is a long list of floral odors where it has been impossible to use the natural flower in the manufacture of the odor and I refer to such popular odors as Lily-of-the-Valley and Violet. There are a number of other odors which are blends and which may have a number of floral constituents but where the prevailing note is that of a single flower. As a matter of fact the purchaser of perfumes is never interested in the chemical or natural constituents of the perfume but only in the odor and its persistence and if the Federal Trade Commission were to adhere in carrying out the forms of labeling suggested in the stipulation just referred to it would render all perfume labeling immediately chaotic and confusing to the public. I do not wish to imply that the representative of the Commission who prepared this stipulation had any ill motive in preparing such a stipulation but he simply had no knowledge whatsoever of perfume manufacturing, selling or labeling and apparently the respondent did not feel financially qualified to fight the Commission's stipulation.

"There is another perfume stipulation, 33 Federal Trade Commission 1687, where the particular perfumer agreed that he will cease and desist from representing

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that his said perfumes represent exotic fragrances of tropical flowers from Hawaii. Many flowers grow in Hawaii, some odoriferous and some not and as far as I know there is no such thing as a standard fragrance which would represent the Hawaiian flowers. I think it would be very possible for some of our technicians in the essential oil trade to reproduce the exotic fragrance of flowers from Hawaii in their laboratories better than it can be done in Honolulu. There is a well-known odor in the perfume trade known as Chypre, which is supposed to represent the fragrance of flowers from the Island of Cyprus but, of course, this perfume is not made from Cyprian flowers.

"There are many other stipulations scattered through the reports of the Federal Trade Commission which seem unnecessarily harsh—one a cease and desist order against the use of the term of 'anti-acid' or words of like meaning; another that said preparation will smooth out lines, will correct signs of age or imperfections, or will give one a clear complexion; another, representing directly or by implication that respondent's product penetrates the skin; representing directly or by implication that respondent's product induces a natural lubrication of the skin. I don't know what a natural lubricant of the skin is although I do know that people have anointed themselves with oils of some kind for thousands of years and I do not think that the use of favorite oils such as coconut oil or the like has been entirely useless.

"One direction in which I think both the Food and Drug Administration and the Federal Trade Commission are wrong in their approach to advertising in the field of cosmetics and drugs is that they insist upon a 100 per cent standard if articles are to be advertised for a specific purpose, a standard which it is impossible for any article to reach.

"For many decades, quinine is known as specific for malaria but does not cure anything like 95 per cent of the cases. We have recently been informed that there is not one athlete's foot, but five different diseases masquerading under the generic name of athlete's foot just as there are dozens of skin conditions which are called eczema, Under the present rules enforced by governmental authorities, it seems that it is unlawful to mention any particular disease in a label or in advertising unless the article can cure all cases of that disease which is impossible. If the advertising is entirely truthful and mentions its limitations, I believe that opportunity should be given to acquaint the public with the virtues of an article even though it is not reactive in all cases.

"We are beginning to understand from the wonders of psychosomatic medicine that in dealing with a cosmetic or a drug, the effect of same is very largely dependent upon the condition of the user. The effect of a vitamin food, a drug, or a cosmetic cannot be stated quantitatively because it will depend largely on the condition and the attitude of the particular consumer. I am not asking to let down the bars, to permit unscrupulous exploitation of the public but I think a *modus vivendi* should be reached with the Federal Trade

Commission and the Food and Drug Administration by which the manufacturer would not be stigmatized as a criminal in making honest and modest claims for his product."

Pharmaceutical Marketing

(Continued from page 158)

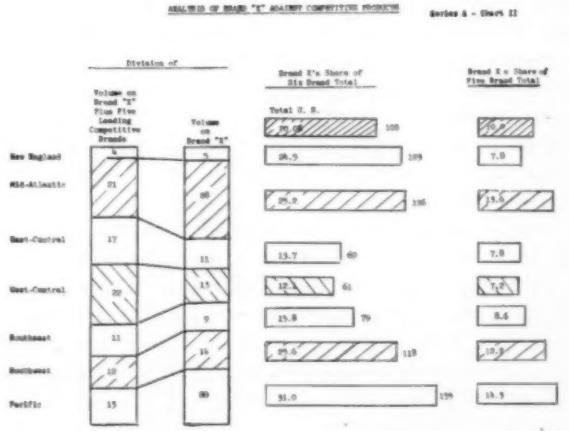
as do the breakdowns embracing the division of sales derived from Brand "X" which are shown in the fourth column. At the extreme right there is shown a Sales Index for Brand "X" based upon its share of a market composed of five brands, all company owned, "A", "B", "C", "D" and "X".

From this data it immediately appears evident that Brand "X" is showing a very high level of sales returns in relation to other Company Brands in the Middle Atlantic, Southwest and Pacific territories. Similarly, sales of Brand "X" grade from fair to poor in the Southeastern, New England, East Central and West Central states.

Now, can you grab the ball, establish minimum potential quotas of 10 per cent of the five brand totals for all areas and demand that the field force should meet these quotas without looking at competitive sales patterns in Brand "X's" field? You might, and you would get disappointing results, should you go no further than an analysis of internal records.

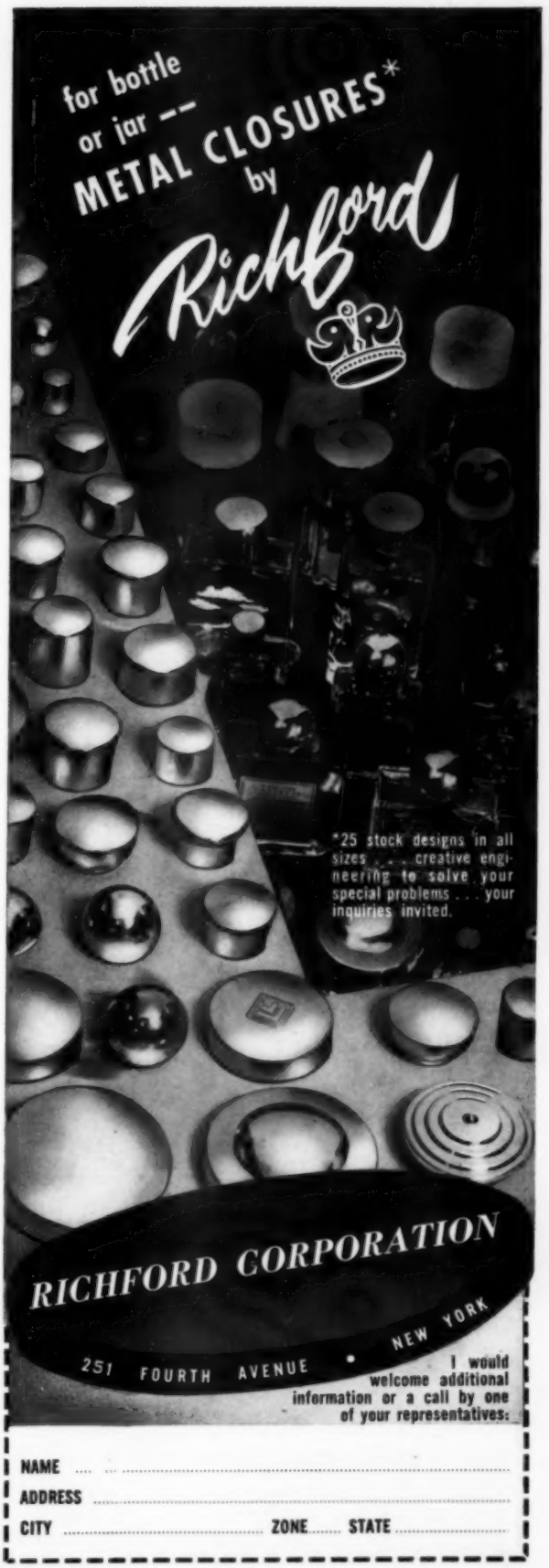
Let us now broaden the scope of this investigation to include competition and relate the Drug Store sales volume of Brand "X" to that realized by five leading competitive brands. What do we find?

Chart II, Series A



In the first column there is depicted a territorial division of the measured universe of sales or a proportionate distribution of Brand "X" sales plus those of the five leading competitive items. Column II represents the Division of Brand "X" drug store sales which we examined on Chart I and later related to sales of other Company products.

On this chart, instead of calculating a Sales Index for Brand "X" by relating the brand's sales to the Company's sales experience, the Index was calculated by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relating it to the total sales in the field. The results are shown in the left-hand column of flags and against this we have thrown the Company Index represented by the right-hand column of flags (this has also been carried over from Chart I).

Here we see the complete broad sales analysis which resembles the initial study in its general pattern yet contains some very significant variations. Here are the variations.

1. Brand "X" shows actual sales strength in New England where we find a product class weakness rather than an inefficient promotional job. In fact, if you compare the two sales Indices you quickly discover that you are doing a better relative job in New England than any sector of the Nation.

2. Brand "X" shows up in even a weaker sales position in the Southeastern, East Central and West Central areas than Company records indicated.

3. Brand "X" assumes a more normal sales position in the Southwest and the Pacific Coast sales strength which was evident in Chart I becomes accentuated.

Here you have a true picture of the relationship of Brand "X" to the market. Now, what to do about it?

I. You have a real sales advantage in New England where Brand "Z", alone, is strong in a market where all such drugs are relatively weak as a product class. Ride your winner out. Here is a place where you have an opportunity to place your product far beyond the immediate reach of competition, an area you may develop into a sales stronghold such as exists on the Pacific Coast.

II. Get behind the surface facts regarding your weak sales areas and find out why? You may learn:

A. Brand "X" had little or no clinical work done in the Southeast, East Central and West Central areas in its pre-introductory and immediate post-introductory stages, whereas competitive items benefited from favorable reports from eminent men in these areas. Here is a spot where Management should call in its Director of the Medical Service Division. He will know what to do.

You may learn:

B. Brand "X" is responsive to sampling efforts in other sectors of the Nation. Should this be the case you need no blueprint to outline one course of corrective action. Extra mail samples in the cities of medical influence, added samples in your detailists' hands plus clinical supplies in hospitals with large OPD facilities all present productive modes of attack.

C. Given a situation where potentials are large, why not deviate from a cut and dried National Detailing Program and substitute your weak produce for one of the "push items" in your least responsive areas.

D. Sectional advertising should be considered both of the direct-by-mail and publication type.

One more thought before I leave this illustration. You can build product sales quotas from your competitive Sales Index that are purposeful. And they will be fair. Personally, I would have not liked to have been a New England Divisional Manager who might have

been asked to meet quotas constructed from internal records alone.

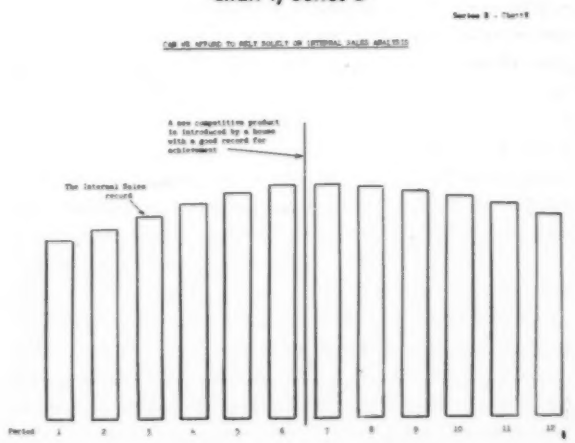
Let us now turn to the subject of new competition. I doubt if the most skilled market research technician, or management consultant, could estimate the number of hours wasted at the executive level by pharmaceutical concerns speculating what impact new competition will have upon existing markets.

You all should recognize the pattern, a new product is launched with characteristically impressive clinical studies and happy predictions by the competitive house that their new discovery, a great advance in therapeutics, is about to take over markets. "This is really it." And just to make you happy the new item falls in one of your bread and butter fields.

Then the build-up starts. Field reports come in reporting inroads into sales, "Doctors are trying the new drug." (Isolate these reports and you will find many are from the habitual worriers.) The top management group, too, may ask what are the implications of the new promotion. As a marketing group you have two sources of information (1) the prescription survey of new specifications if you have such a project in force and (2) field audits of sales. Believe me, your guess based upon a spot check, or representatives' impressions, is not worth the paper it is written upon.

Again let us review two case histories. You have a product which has been marketed for a period of time, it is an important producer of sales income and profits. When cumulative bi-monthly sales for succeeding two months periods are charted you find that this product has realized an increment to sales right up to the point where the new item has appeared on the market. Succeeding factory sales records show first a leveling and then a sharp decline in sales returns.

Chart I, Series B



Given no outside data a perfect case of circumstantial evidence exists which points to the conclusion that the sales loss, or the reversal of a forward trend, may be traced to the competition stemming from the new product. This conclusion, from Chart I, assumes that you know of no other therapeutic advances which may have radically disturbed the whole sales field.

It is submitted that you should not judge sales trends

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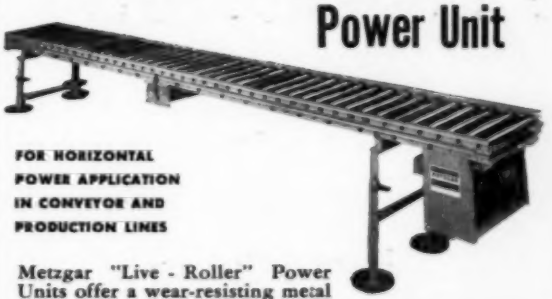

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from internal data. You should know what the sales of a potentially dangerous competitor may be from the inception of his sales drive. Given accurate information you can do much not only to protect markets but to conserve Company assets. You would certainly take two widely divergent courses of action given factual data covering competitive retail sales, which data showed returns similar to those outlined in the second chart in this series.

(To be concluded)

Deodorant Preparations

(Continued from page 155)

to the bottle causes the liquid to be sprayed through the orifice. This type of container offers an easy and convenient method of application, as compared to the dispensing of the liquid from the usual glass bottle. All the different parts of the plastic containers are made from polyethylene which is impervious to aqueous salt solutions of this type as compared to the conventional metal atomizers which are readily attacked by solutions of acid pH. Its popularity is therefore predicated on convenience rather than on any other single factor and the author believes it will become established as a regular cosmetic item.

From a purely technical standpoint, there is much to be said for the solution type as against the cream antiperspirant. It is certainly easier to prepare than is the cream, and certainly there are less materials incorporated into the preparation which would interfere with the efficiency of the system. Quaternary ammonium germicides may also be easily incorporated in such a system without danger of incompatabilities brought in by the waxes, and their presence would increase the efficiency of the preparation by lowering the surface tension of the system so that it may more easily spread on the skin as well as to serve as an easy dispersing agent for any essential oils it is desired to add to the preparation. In the preparation of this type of product the effective agencies need be no different from those used in creams. The buffers used could be the same also. However, any precipitation will be noticed here where it would not be in a cream. It would, therefore, be wise to be sure that no precipitation will occur on long standing.

In the discussion of preparations whose purpose is to behave as deodorants without necessarily having any anti-perspirant activity, we must recognize that the proteinaceous constituents of perspiration are soluble in water and that the bacteria which cause its degradation have to work in an aqueous medium. In order to be

effective against the organisms, the bacteriacide or bacteriastat must therefore be capable of solution in water. The vehicle in which it is incorporated may consist of an entirely lipoid base with the bacteriacide incorporated in it, but it should prove an effective agency if these conditions are observed. The choice of a bacteriastat should depend on its efficacy against the organism against which it is directed. Since these bacteria are not of any one classification, the agents are usually tested on organisms which have been raised on a culture of human perspiration. Such a method of testing has proved to be entirely adequate.

The first popularly accepted preparations of this type have been the salve-like preparations in which substances such as hexamethylene tetramine and other agencies were used as bacteriacides. Mroe recently the deodorant cologne has appeared on the market which consists of a solution containing the bacteriacide and essential oils. In this connection quaternary ammonium salts have come into fairly common use because of their efficiency as bacteriacides. They are used in somewhat larger concentration than their actual phenol coefficients call for however, since they are likely to encounter substances in the field of their use which would cause an incompatability. The literature shows for example a reduction in efficiency due to the presence of proteins, and of course, their efficiency is greatly cut down by the presence of soaps. Therefore, though in theory a 1:30,000 concentration may be thought of as being sufficient for them to function a 1 per cent solution is safer.

Another agency which has begun to come into fairly common use is the chlorinated phenolic. These materials are not very soluble in water, however, and should be used as the sodium salt. They are most effective in conjunction with soap and, indeed, have become quite popular as the active agency in the "deodorant" soaps.

Specific information on the functioning of these agencies is rather hard to come by since these functions are affected by so many different sets of conditions. It is possible, however, to obtain a product by formulating it according to the conditions desired. As stated above in regard to anti-perspirants, a compromise must be made between two sets of desirable conditions which clash. The formulation of a finished product therefore becomes a set of compromises.

F.D.A. and Antihistaminics

(Continued from page 159)

perhaps for some years until there is a gradual accumulation of medical experience. Perhaps they will be found more useful than now appears likely. However, we do know this much, that they are safe if the dosage recommended on the label is not exceeded, and the warning statements in the labeling are heeded.

Mr. Keefe: "Right at that point, Dr. Dunbar, if I may interrupt, I want to be very clear because I intended to ask you some questions about this anti-

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histamine campaign that is on all over the country where several unrecognized organizations are selling these pills. A great campaign is on all over the country based on the Reader's Digest article and others. The question has come to me: 'Well, this must be all right, these remedies must be what they claimed or the Food and Drug Administration would not permit them to make these claims.'

Dr. Dunbar: "That is why I am making this statement.

Mr. Keefe: "In order that we can get that absolutely clear, we would like to know about it. When that request has come to me, I have tried to answer it. Under the terms of existing law, you cannot prohibit the distribution of these articles unless you can establish that those articles are in fact deleterious to human health. Is that right?

Dr. Dunbar: "That is right.

Mr. Keefe: "The burden is upon you to establish it. In other words, you would have to go into court and say 'If a person takes this antihistamine tablet in accordance with the directions which are printed upon this thing, it is absolutely detrimental to health'—and that you cannot do, can you?

Dr. Dunbar: "I will go farther than that. If we were able to say that, we would not permit it to go on the market. The new drug application would not have been made effective. We have no evidence that if taken according to directions they would be harmful so we have to make the new drug application effective.

Mr. Keefe: "So this person has this one called by its trade name—I will not mention it—there are many of them on the market.

Dr. Dunbar: "There are only about three different basic drugs that are now on the market for over-the-counter sale to laymen. Several others will appear in the very near future. There are others being used on prescription. There are a number of different brands of the three basic drugs now on the market being sold without prescription.

Mr. Keefe: "It seems to me I have been in drug stores asking about this and I have seen a whole flock of them on the druggist's shelves.

Dr. Dunbar: "There are several different manufacturers or distributors using the same ingredients.

Mr. Keefe: "They all use the same ingredients, but they are put out by different manufacturers?

Dr. Dunbar: "There are three different basic types of ingredients, which are all well recognized antihastamines. They are the three basic antihistamines now going into these alleged cold remedies.

Mr. Keefe: "When you speak of antihistamine you are speaking of the drug itself?

Dr. Dunbar: "That is right.

Mr. Keefe: "You are not speaking of this tablet here which may contain a lot of things, but may contain one or the other of these three antihistamines?

Dr. Dunbar: "That is right.

Mr. Keefe: "But you may have 50 or 100 of these particular tablets on the market?

Dr. Dunbar: "Actually, I think at the present time the number on the market is probably below 50. You have probably been in a good many drug stores and seen them stocked up in great quantities.

Now you will also notice this: Those labels are fairly conservative. Most of the claims that you have seen for the treatment of colds are in ads and over the radio.

Mr. Keefe: "I have heard them over the radio and I have seen it in advertising, full-page ads.

Dr. Dunbar: "You see our control only goes to the labeling. The advertising is something else again which is not subject to our control. However, I realize that the Federal Trade Commission is in the same situation we are. We are highly skeptical about these products doing the things they claim, but until you have controlled studies made over long periods of time, you just are not in position to take evidence into court either for or against them, so we simply have to watch the situation.

Mr. Keefe: "In other words, as the law stands now, the burden is upon the Food and Drug Administration or the Government, in case it takes action, to establish in court under the rules of evidence, the fact that this article put on the market under these extravagant claims is in fact deleterious to human health.

Dr. Dunbar: "Is in fact deleterious or is misbranded as to its therapeutic value.

Mr. Keefe: "As long as they do not misbrand it and as long as the dosage recommended is not in itself deleterious, you can do nothing about it?

Dr. Dunbar: "That is right.

Mr. Keefe: "If I had my way about it, as you know, I would reverse that process and make the burden be upon those who would put this on the market, that they must be able to show clinically, as a result of definite proof, that it is not harmful, rather than to have it the other way around with the burden on the Government.

Dr. Dunbar: "Under the new-drug section, they do have to submit evidence of harmlessness, but they do not have to submit evidence of efficacy. The new-drug section does not contain the word 'efficacy.' It does require that they show to the satisfaction of the Administrator, that it is safe when taken according to directions, but it does not require that they establish in advance of sale that it will do the things they claim it will do.

Mr. Keefe: "As far as the public is concerned, they are being taken for a great ride unless these antihistamines will do some of the things they claim because the sales are really terrific.

Mr. Hendrick: "It has not been determined that this drug is harmful?

Dr. Dunbar: "Not if they follow directions. We are investigating an alleged case in Chicago where a young bride was found dead in a hotel and she apparently took some of these pills. But there is every indication that she took within a couple of hours a massive dose, almost two bottles of those things. Well, you could kill yourself with aspirin if you took it like that, you see. That does not prove anything."

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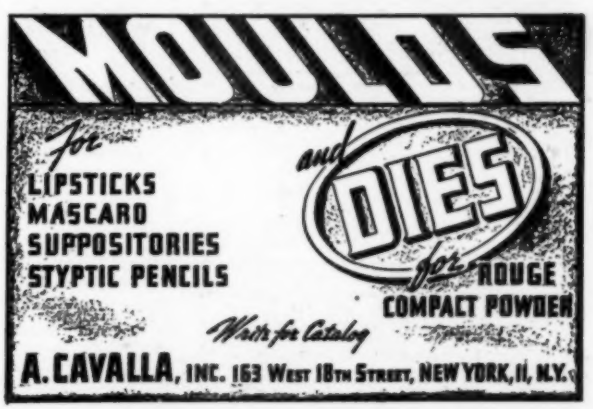

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